CANADIAN GEOGRAPHICAL JOURNAL

Vol. XXXX No. 4 • APRIL 1950 • PRICE 35c

THE CANADIAN GEOGRAPHICAL SOCIETY

OTTAWA, CANADA

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Published monthly by
THE CANADIAN GEOGRAPHICAL SOCIETY
36 Elgin Street, Ottawa

Editor - GORDON M. DALLYN — Assistant Editor - MALVINA BOLUS

This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustrations, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth and other parts of the world in which Canada has special interest.

The articles in this Journal are indexed in the *Canadian Index* which may be found in any public library.

The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

Address all communications regarding change of address, non-delivery of Journal, etc., to the publication office, 1,000 St. Antoine St., Montreal, Canada, giving old and new address. On all new memberships, the expiry date will be printed on wrapper containing starting number. This will constitute a receipt for subscription.

Membership dues of The Canadian Geographical Society, which include postpaid delivery of the Journal, are $4.00 per year in any country, payable at par in Ottawa.

Member Audit Bureau of Circulations

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Courtesy of Color-Photo Service, Kingston

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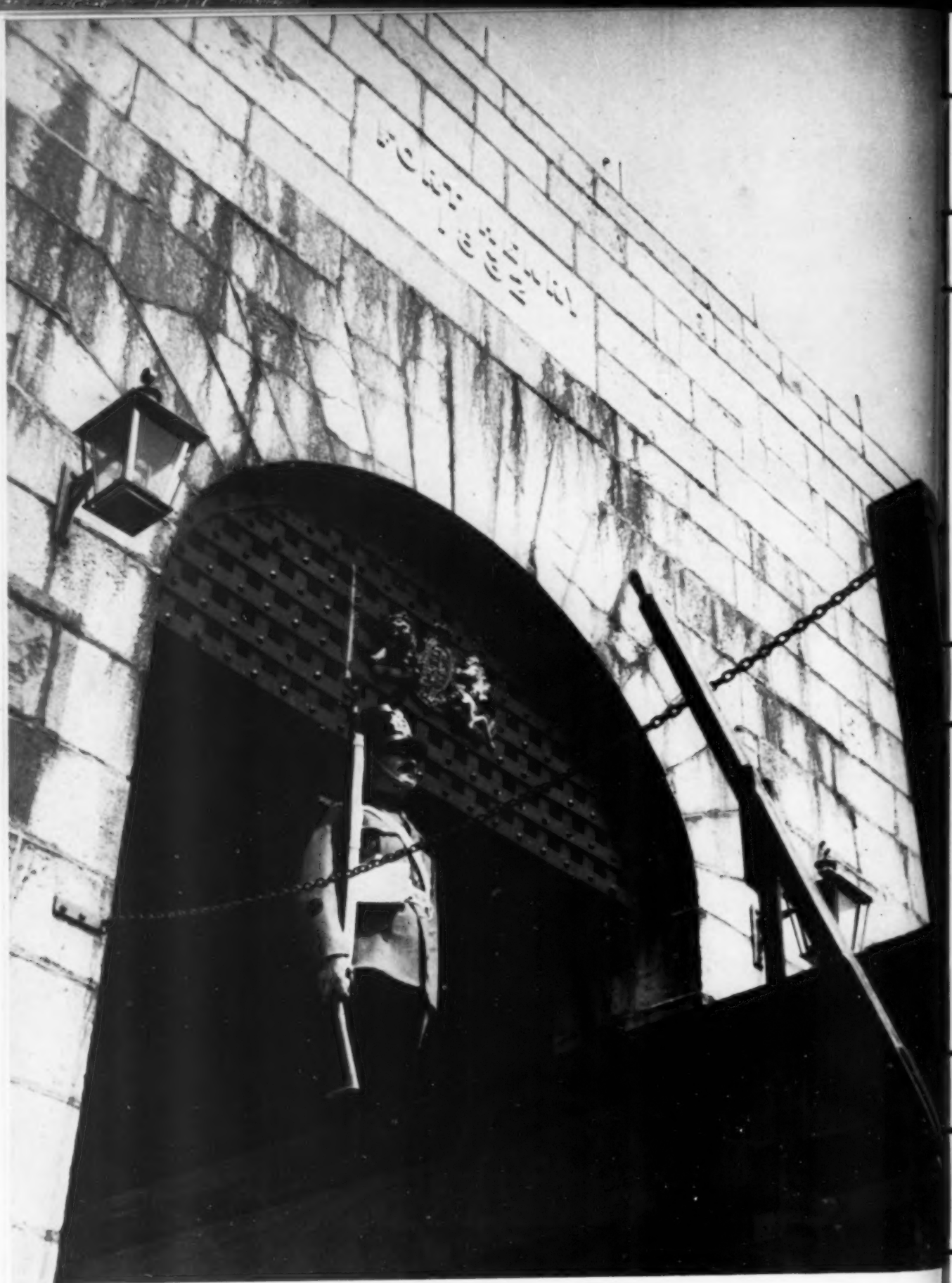
AUTHORIZED AS SECOND CLASS MAIL, POST OFFICE DEPARTMENT, OTTAWA

PRINTED IN CANADA



On Guard

Kingston and the Royal Naval Dockyard from Fort Henry, 1828. James Gray

Old Fort Henry

The Citadel of Upper Canada

by RONALD L. WAY

TODAY, even as one hundred years ago, old Fort Henry dominates the city of Kingston. Obdurate, it sprawls across the crest of a commanding promontory to the east of the harbour, an impressive fortress, bristling with mounted cannon, and defended by glacis, ditch, caponnière, reverse fires, flanking towers, and all the paraphernalia of early nineteenth century fortification. Originally designed to keep our southern neighbours off Canadian soil, it is now invaded annually by ever-increasing armies of American vacationists. Yet if it is true that the clearest record of a nation's life lies in the structures it has built, this grim reminder of our eventful past must have for present-day Canadians some deeper significance than its modern reputation as a premier tourist attraction.

Throughout the War of 1812, Kingston as the site of the British naval establishment on Lake Ontario, was in a military, as well as a naval sense, the most important strategic position in Upper Canada. In the last analysis, a successful Canadian defence against the United States rested upon British assistance, the swift and sure arrival of British reinforcements and military stores. As long as Kingston was held securely and the communications with Montreal kept open, the necessary materials for the equipment of war vessels could be forwarded from the Mother Country and the supremacy of the lake contested with the Americans. Upon the command of Lake Ontario, depended the security of the country as far as Niagara and the means of despatching troops and supplies for the defence of the Niagara Frontier and the country farther west.

When, on June 18, 1812, President Madison of the United States delivered his ill-fated declaration of war against Great Britain, both sides were equally unprepared

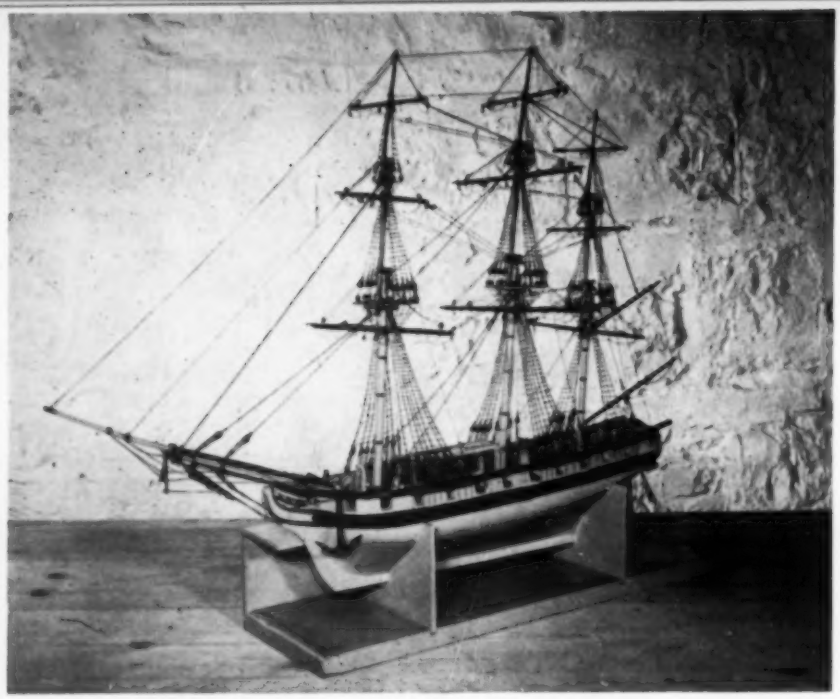


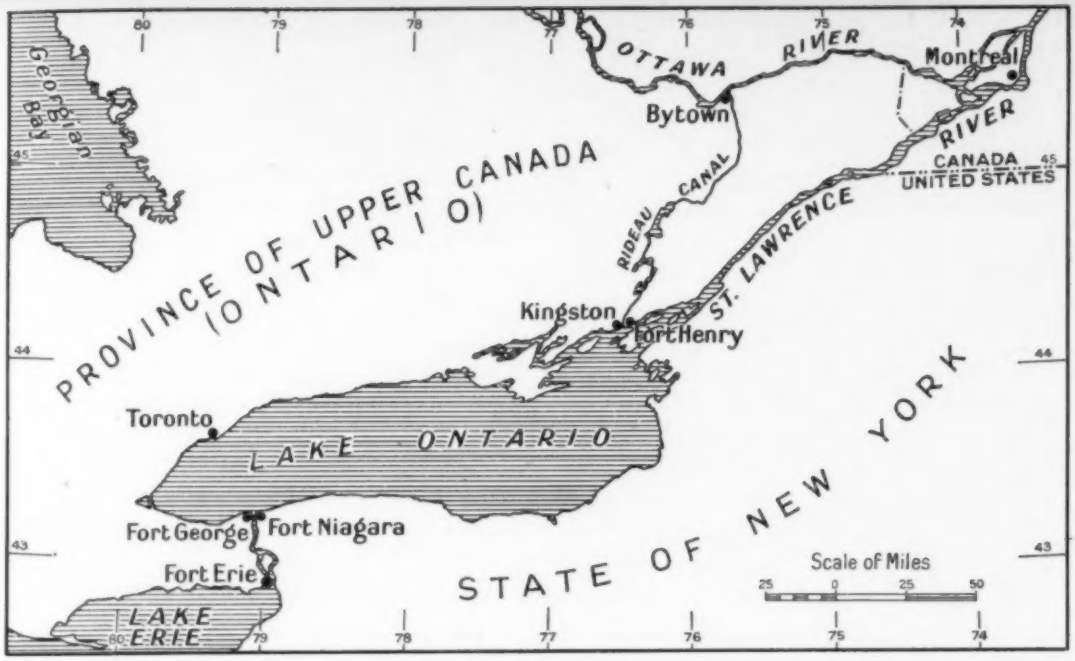
Photo by George Lilley

Contemporary scale model of H.M.S. Royal George, launched at Kingston, July, 1809

for naval operations on the Great Lakes. The rapids of the St. Lawrence prevented the ascent to Lake Ontario of vessels of the regular navies of both belligerents, but their crews were marched up by sparing handfuls to man such craft as could be bought or built to float guns. In the earlier stages of the war, the ships were usually of fore-and-aft rig, cutters, sloops and schooners, hastily converted from the peaceful pursuits of commerce to the purposes of war. Even the largest craft were less formidable than the salt-water vessels classed at that time as sloops of war — a rating below that of frigates. Yet, before the end of the conflict, Lake Ontario floated frigates more powerful than any on the ocean, and boasted a battleship of the line rivalling Nelson's *Victory*. When peace was signed, His Majesty's Navy based upon Kingston comprised a score of vessels varying in size from the battleship *St. Lawrence*, a three-decker of three thousand tons burden with one hundred and two guns and a crew of one thousand men, to the little schooner *Beresford*, of one hundred and eighty-seven tons, twelve guns and crew of seventy. If the mere names of ships such as the *Prince Regent*, the *Princess Charlotte*, the *Royal George*, the *Wolfe*, and the *Earl of Moira* do not arouse in our hearts a thrill of pride, the fault lies not with their gallant crews who fought and died on Lake Ontario. Almost all of these vessels were built at Kingston in the Royal Naval Dockyard, which occupied Point Frederick, a narrow, boot-like peninsula to the west of Fort Henry where the Royal Military College stands today. Here were the launching ways, the storehouses, the wharfs, the barracks for sea men and artificers, and all things necessary for the building of the lake fleet.

It was for the protection of the Naval Dockyard that Fort Henry first came into being. When hostilities began, Kingston was defenceless except for a small garrison in barracks and two sea batteries, one of which was located on Mississauga Point,[1] the other on the southern extremity of Point Frederick. From a military standpoint, the position was completely open to attack from the rear, and a period of feverish building ensued. West of the town, a line of fieldworks consisting of five fortified blockhouses connected by picketting, was hurriedly constructed. Point Henry, which commanded the eastward approaches, was cleared of

1 The location of the present Locomotive Works.

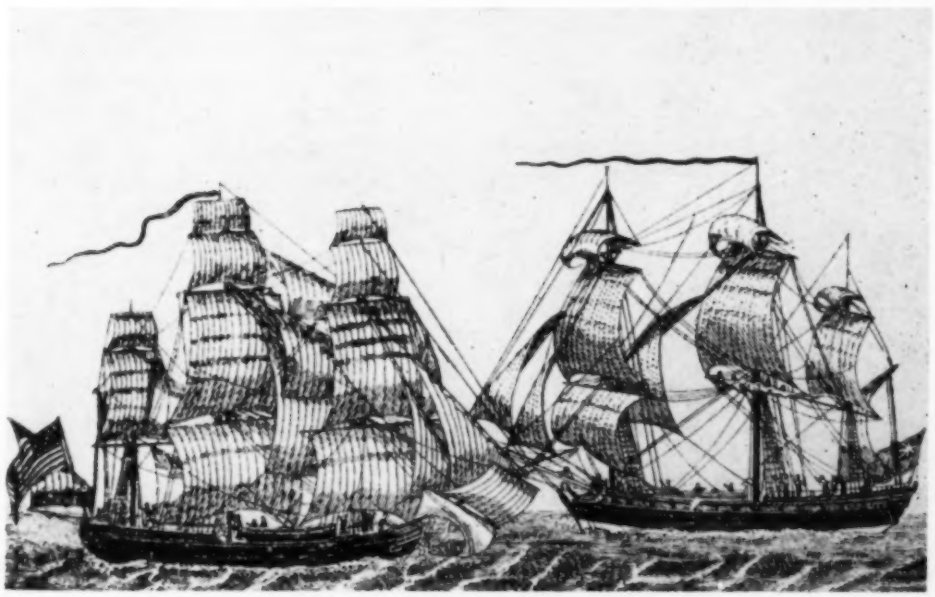


The Strategic Position of Kingston

trees and there, on the seventh of May, 1813, Captain Viger, with a company of French-Canadian Voltigeurs, established a camp upon ground which he dolefully described as "a wilderness of stumps, fallen trees, boulders and rocks of all sizes and shapes, infested with mosquitoes, gnats, sand-flys and other abominations in the shape of loathsome reptiles."[2]

Fort Henry was now begun. Under the direction of Captain Benjamin Marlowe of the Royal Engineers, progress was rapid and by November, a substantial fortification with demi-bastions, redans, a circular

2 Neilson, J. L. H., *The Diary of an Officer in the War of 1812-14*, The Queen's Quarterly, (Kingston, 1895), Vol. II, No. 4.



From a contemporary print

United States Sloop of War Gen. Pike, Commodore Chauncey, and the British Sloop of War Wolfe, Sir James Yeo, Preparing for Action, September 28th, 1813.

battery, connecting curtains and a ravelin had taken shape.[3] The works were surrounded by a ditch, the slopes of which were revetted with logs. During 1814, two stone blockhouses,[4] each fifty feet square, were constructed within the ramparts and picketting set up in the bottom of the ditch. Between 1815 and 1820, the timbers sustaining the walls of the ditch were replaced in part by stone-work, and the addition of bomb-proof magazines, ordnance offices, an armoury and extensive stone barracks made Fort Henry the strongest post west of Quebec.

The War of 1812 having left a heritage of bitterness and distrust, British military leaders sought the means of improving Canadian defences against the eventuality of a future struggle. The matter received the personal attention of the Duke of Wellington, who, in 1819, drew up an exhaustive memorandum on the subject. In his opinion, the necessity of securing an alternative and safer means of communication between Montreal and Kingston than that provided by the St. Lawrence River route had been amply demonstrated by the war. Not only were the rapids of the St. Lawrence a serious obstruction to navigation, rendering the cost of transport expensive beyond belief,[5] but the gravest danger existed in the international section of the river, where, in the words of Wellington, "An enemy has only to place a few heavy Batteries closed in, at almost any points of the River in order to prevent our use of the Navigation. We may likewise prevent his using it; but it is absolutely necessary to us and is not so to him".[6] To render the defenders of Canada independent of these difficulties, the Duke recommended the improvement of the internal waterways of the country, especially the development of a route from Montreal to Kingston via the Ottawa and Rideau Rivers. He wrote: "I would recommend first that the canal from Montreal to La Chine (sic) should be completed, so as to take boats of the largest size. Secondly — that the Navigation of the River Ottawa should be made practicable to the Junction of the River Rideau with the former. Thirdly — that the Navigation of the River Rideau should be made practicable and easy to the Junction with the Irish Creek and thence if possible through the different lakes to Kingston."[7]

In 1825, Wellington, at that time Master-General of the Ordnance, despatched to Canada a commission of Royal Engineers instructed to report upon a proper system for Canadian defence. While in Canada, this Defence Commission, of which Sir James Carmichael Smyth was chairman, traversed the proposed Rideau route and their recommendations followed the lines of the Duke's own previous ideas. The Commissioners found that the suggested communication from Montreal to Kingston by way of the Ottawa and Rideau Rivers was feasible and advised the construction of a canal by the British Government, of a size to permit gun boats to pass. Furthermore, in the opinion of the Commissioners the defences existing at Kingston would be inadequate for the protection of the entrance to the canal.[8]

On receipt of the Commissioners' report, the British Government decided to undertake the Rideau project and in the summer of 1826 two extremely able officers arrived in Canada — Lt. Col. John By, entrusted with the construction of the Rideau Canal, and Lt. Col. Ross Wright, charged with the strengthening of Kingston's defences. Six years later, the passage of the steam-boat *Pumper* from Montreal to Kingston, with a party of military and civil officials, marked the completion of the inland waterway. However, instead of the Defence Commission's estimate of £169,000 it had cost nearly £800,000.

3 Public Archives of Canada, C Series, Vol. 680, pp. 166-168, Capt. B. Marlowe to Maj. Gen. Darroch, Kingston Nov. 10, 1813.
4 C. Series, Vol. 388, p. 183, Extract of Capt. Marlowe's Report of Progress at Kingston and Dependencies, Montreal, Sept. 23, 1814
5 The cost of transport from Montreal to Kingston amounted to 54 s. per cwt. To ship a 24 pdr. long gun this distance cost £200.
6 Public Archives of Canada, Q Series, Vol. 154, p. 146, Wellington to Bathurst, London, March 1, 1819.
7 Q Series, Vol. 154, p. 146, Wellington to Bathurst, London, March 1, 1819.
8 Q. Series, C. O. 42, A Report to His Grace the Duke of Wellington, Master General of His Majesty's Ordnance, etc., etc., Relative to His Majesty's North American Provinces, by a Commission of which General Sir James Carmichael Smyth was President, Lieut. Col. Sir George Hoste, R. E., and Capt. Harris, R.E., members, dated Halifax, Sept. 9, 1825.

Lt. Col. Wright arrived at Kingston with instructions to prepare detailed plans with estimates for the reform of Kingston's fortifications, in accordance with the recommendations of the Defence Commissioners of 1825. Actually, he was:

> "To project and to estimate for the reform and repairs of the Fort on Point Henry; for the same to the two Batteries at Point Frederick and at Point Mississaga (sic) for the construction of a new Work on the Kingston side of the Harbour near No. 5 Blockhouse and for three Towers, one on Snake Island, one on Cedar Island and one on the Main Land about a thousand yards to the North of Fort Henry, to command a hollow way by which the Dock Yard could be approached."[9]

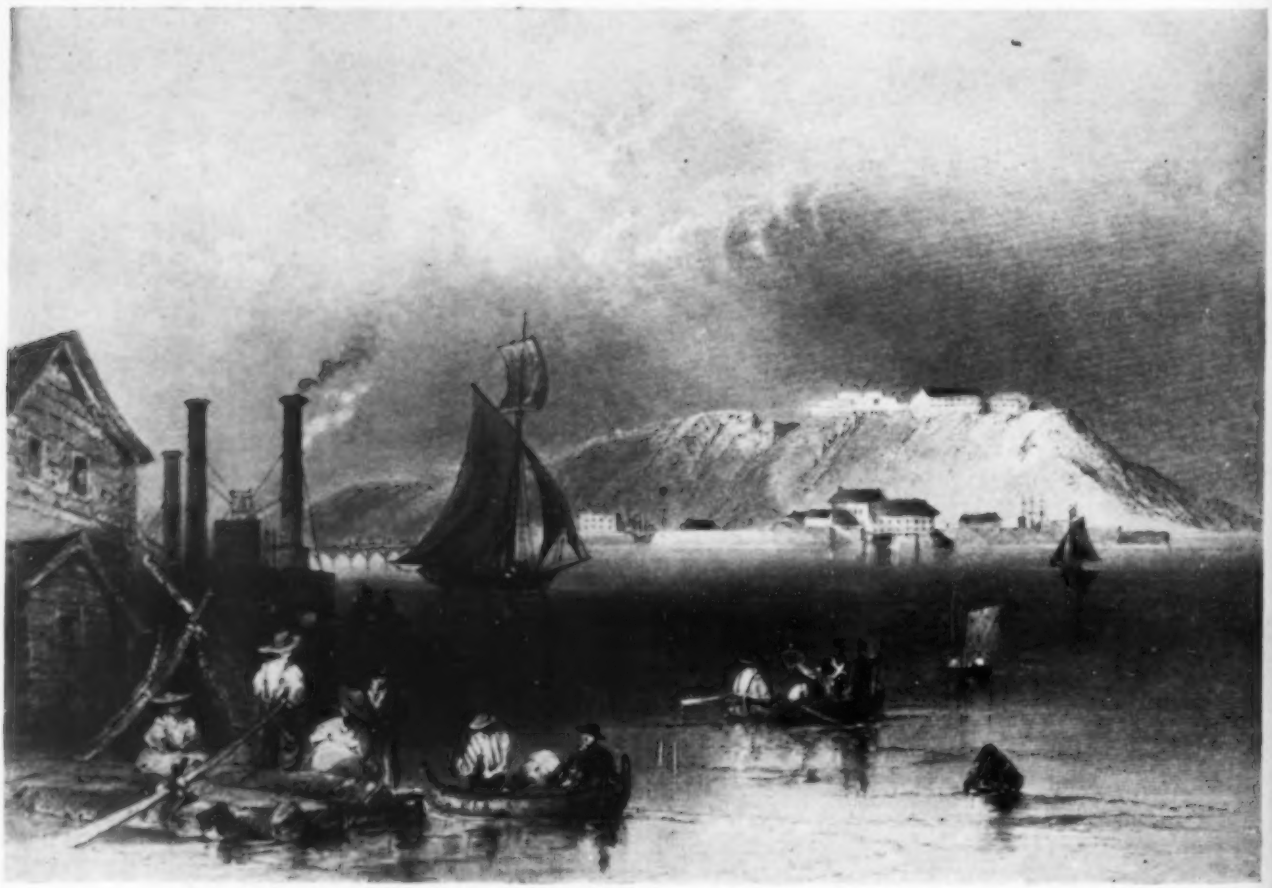
But beyond an authorized expenditure of £5,000 for the quarrying of stone, intended for use in the proposed alterations, Wright was to undertake no actual construction. It would seem that for the time being the expense involved in the building of the Rideau Canal was a sufficient strain upon the patience of British taxpayers.

In 1828, Lt. Cols. Fanshawe and Lewis, members of a military committee of which His Excellency, Sir James Kempt, the Governor of Lower Canada, was President, were instructed to inspect on the spot the plans Wright had prepared for Kingston and to report upon their adequacy. These officers were of the opinion that the proposals of 1825 "would not protect the Dock Yard and other Stores from a Coup de Main nor from bombardment" and instead recommended the erection of a contour of five formidable redoubts, which with an amended Fort Henry would keep an enemy from 2,300 to 2,700 yards distant from the Naval

9 C. Series, Vol. 426, Memoranda Relative to the Proposed Reform and Repairs to the Fortifications at Kingston, March 14, 1826; addressed to General Mann, Inspector General of Fortifications etc., by Major General Sir James Carmichael Smyth.

Top to bottom: The Parade Ground
The Gorge Front
The North Ramparts

Plan Showing the Works Proposed for the Defence of Kingston October 1829



Fort Henry· 1840. W. H. Bartlett

Dockyard and the entrance to the canal.[10] Experience during the War of 1812 had indicated that a hostile force would move against Kingston from the land side and the forts should be designed to resist a regular siege from that direction. Defence of the harbour in the face of a purely naval attack was to be taken care of by a system of martello towers constructed at half-mile intervals.

In October of the following year, 1829, a Committee of the Board of Ordnance in England, headed by Sir Alexander Bryce, while giving general approval to the recommendations of the committee of 1828, differed with them upon one important point. Reporting to General Gother Mann, Inspector General of Fortifications, they wrote:

> "On carefully considering the position of the Fort on Point Henry, together with the plans and Estimates very ably prepared by Lt. Col. Wright, for its improvement, we are of the opinion that owing to the confined nature of the ground . . . and other unfavourable circumstances the chief of which is the great expense of excavating the Ditches, and defilading the Work in solid Rock, from an amphitheatre of higher ground in front, a very objectionable Work would be obtained at a very great comparative expense; We have therefore been induced to propose altering the nature of this Work, from a bastioned Fort to a large Casemated Redout (sic) defended by Reverse Fire, which at little more than one third of the expense would we think be in this situation equally efficient . . . The work we propose for this Point has been traced to command the Ridge in Front, so that with a small Garrison, the ground on which the Depots of Ordnance and Commissariat

10 Q. Series, Vol. 185, p. 2, Report of Lt. Cols. Fanshawe and Lewis to Lord Beresford, Master General of the Ordnance, Quebec; July 23, 1828.

The St. Lawrence from Fort Henry, 1840 W H. Bartlett

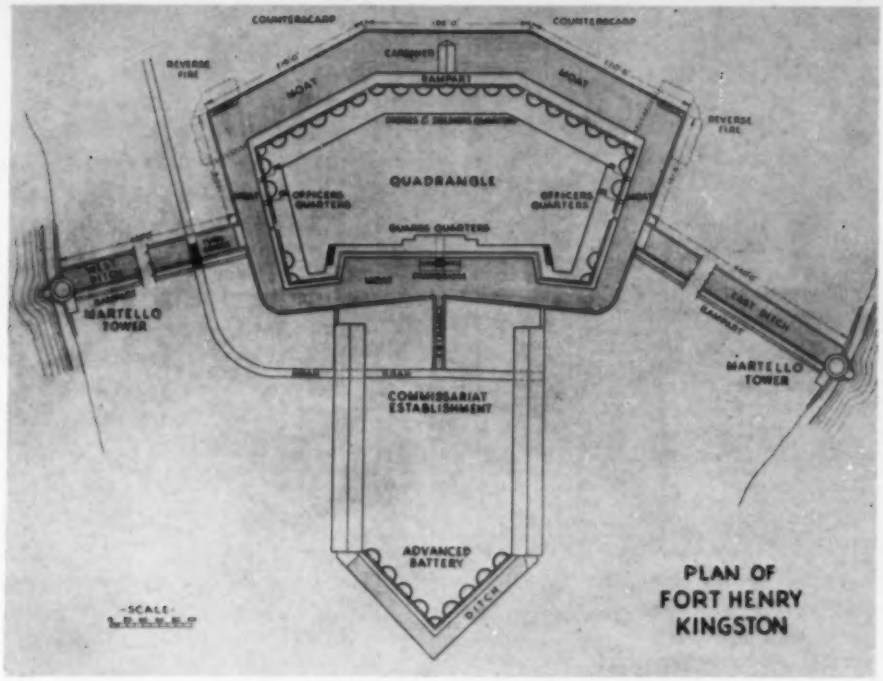
Aerial View of Old Fort Henry Photo by George Lilley

Stores will be concentrated may be secured from a Coup de Main on the Land Side".[11]

The recommendations of Sir Alexander Bryce's committee received governmental approval, together with their plans for a new Fort Henry, the five other redoubts, and the martello towers. Of these, the present Fort Henry with its Advanced Battery, four of the martello towers and a sea battery were the only units of the system ever constructed. Complete estimates and plans for the five other forts — very similar in design to Fort Henry — were prepared and negotiations carried on for the purchase of the necessary sites; however, as relations with the United States improved, opposition to the increased cost of Colonial Defences led the British House of Commons to refuse the funds necessary to complete the fortifications of Kingston.

While the plans for Kingston's new defences received official approval in 1829, it was not until the completion of the Rideau Canal in 1832, that Lt. Col. Wright was authorized to proceed with the demolition of the existing Fort Henry and the construction of the new fort, for which considerable quantities of stone had already been prepared. The stone was limestone, quarried

11 Public Archives of Canada, W.O. 55, Vol. 1886, Report of Engineers on Works proposed to be constructed for the defence of Kingston and Point Henry, Oct. 24, 1829.



on both sides of the road leading from Kingston to Ganonoque, and materials for mortar and cement were secured in every direction, as may be seen at the present day by examining the ground to the north of the fort. Unlike the first fort, which had been erected by military labour, much of the work upon the new Fort Henry was performed by contract. The task was no light one for the times, with the limitations of equipment and materials, and even by modern standards represents a considerable feat of engineering. Construction of the main body of the redoubt involved an expenditure of approximately £70,000, the average labourer receiving from 3 s. to 3 s. 6 d. per day —

West Branch Ditch and Tower, Old Fort Henry

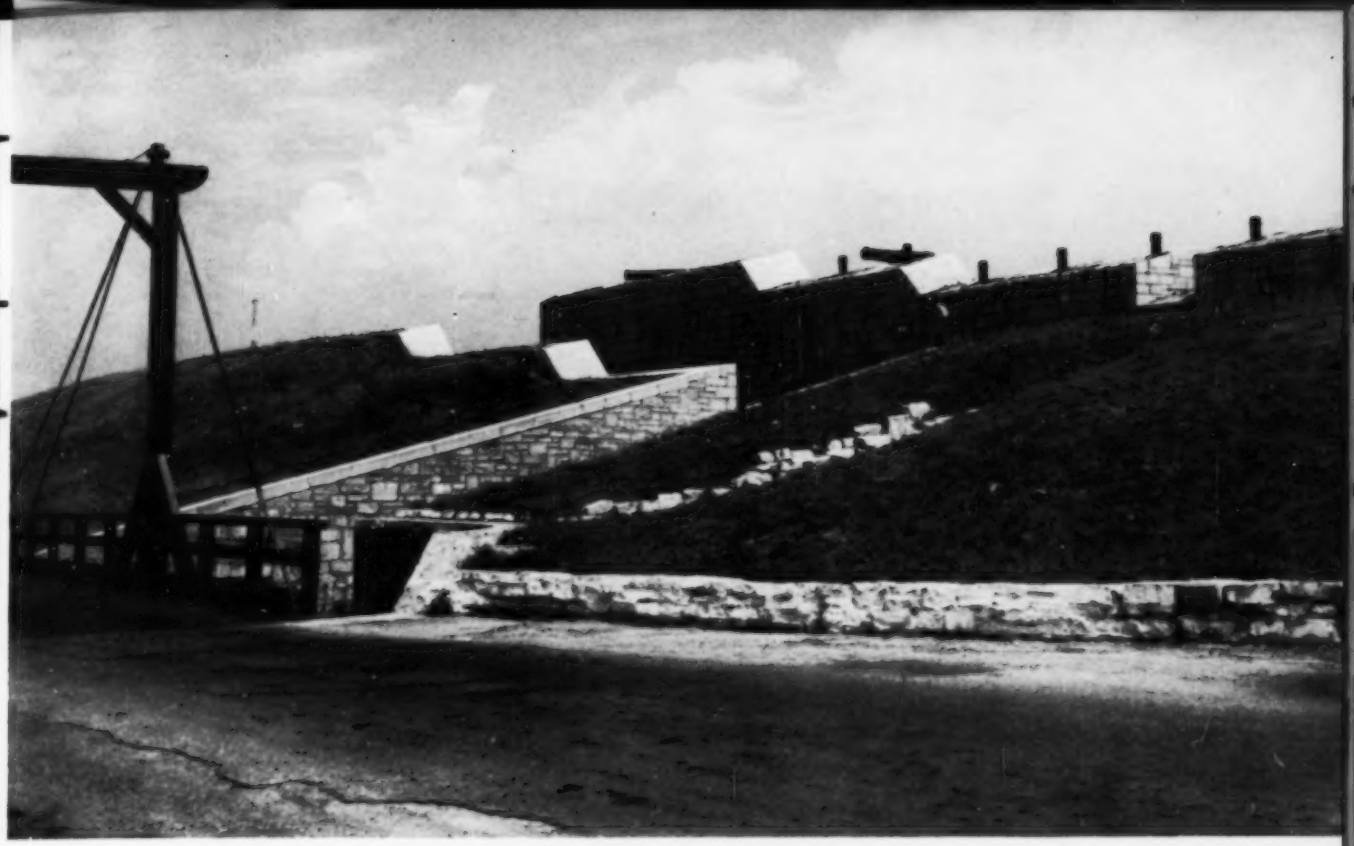
about seventy cents in Halifax currency.[12] Lt. Col. Wright and his able assistant, Capt. R. B. Bonnycastle, prosecuted the work vigorously, in spite of the handicap of the cholera epidemic of 1832-34, when one in ten of the population of Kingston perished. By 1836, the main portion of the present fort was completed and two batteries of Royal Garrison Artillery and one regiment of the line took possession.

The plans of the fort approved in 1829 included a sea battery, to the rear of the redoubt and facing the lake, designed to cross fire with a tower on Cedar Island and the fort on Point Frederick. Furthermore, two rows of casemated store rooms for the commissariat depot were to connect this sea battery with the fort and cover the communication. Construction of the battery, now known as the Advanced Battery, together with the Commissariat Stores, was not begun until 1841, by which time, Lt. Col. Wright had returned to England and the work was under the supervision of Col. Oldfield, Lt. Col. Ward and Capt. Whitmore. It was completed in November 1842, at a cost of some £10,632 sterling.

Only through an understanding of the scheme of defence adopted by the Engineer Committee of 1829 is the structure of Fort Henry fully comprehensible today. In military language, the fort is a casemated redoubt, the main portion consisting of a pentagonal figure, the three-sided front of which faces inland towards the north and completely covers the Rideau entrance and the site of the naval establishment against attack from that direction. The entrance to the fort is on the south side through the Advanced Battery and the Commissariat Stores, whence access to the main body of the redoubt is through an archway in the curtain wall, protected by a drop ditch and drawbridge. Built into the walls of the fort are long and narrow, vaulted, shellproof casemates which served as barracks for officers and men. The casemates on the front faces, in which the ordinary soldiers were quartered, consisted of two tiers; those on the side faces, which were occupied by the officers, have only one tier. The chief armament is mounted upon the ramparts above the casemates and originally consisted of twenty-seven 24 Pdr. guns upon traversing platforms, which allowed them to be turned with ease in any direction required. Surrounding the principal part of the fort is a dry ditch approximately forty feet broad and thirty feet deep, the counter-scarp of which effectively screened the walls from gunfire. The walls are flanked by a caponnière in the centre of the north front and by gun-rooms — known technically as reverse fire chambers — built in behind the counter-scarp in the north-east and north-west angles of the ditch and connected with the fort by underground tunnels. Branch ditches extend down to the shores on either side of the peninsula where they terminate in strong martello towers, sixty feet in height and thirty feet in basal diameter. Swept by the fire of Fort Henry and the martello towers, these ditches served as obstacles to an enemy approaching the south side of the fort. The whole peninsula was thus a compact defensive unit and constituted the first sector in the chain of forts planned for the protection of Kingston.

Although never attacked by an enemy, the history of Fort Henry has not been lacking in colourful incidents. When the fort was first garrisoned, Upper Canada seethed with the unrest that was to culminate in Mackenzie's ill-starred Rebellion of 1837. It is not necessary to repeat here the familiar story of that wild and rash movement, precipitated by governmental abuses. On the eve of the actual outbreak, Sir Francis Bond Head, Lieutenant-Governor of Upper Canada, was sublimely overconfident, obsessed with the idea that he was "impregnable in the support of the people". When, in the late autumn of 1837, Sir John Colborne, with rebellion at hand in Lower Canada, asked for what troops Head could spare, in a grandiose gesture he sent every Imperial soldier to the lower province, including the regular garrison of Fort Henry. Consequently, when armed rebellion struck, on December 4th, Kingston was undefended,

12 Kingston *Chronicle and Gazette*, June 10, 1837.



Swing Bridge and West Front, Old Fort Henry

save for the loyal, but inadequately trained, militia. The local situation was not improved by the alarming report that the fugitive leader, Mackenzie, at the head of a large body of American filibusters was on his way across the frozen lake to take the town. The attack never came, but it had been planned. In February, 1838, the American, Rensellaer Van Rensellaer, who was in sympathy with the Canadian rebels, had actually conceived a scheme for the capture of Fort Henry. A traitor among the garrison had agreed to spike the guns, and even to open the gates upon the approach of the "Patriots". The plan leaked out and when sixteen hundred militia were assembled at Kingston, an American force of some two thousand men, which had taken possession of Hickory Island near Ganonoque, melted away.[13]

Four months later, John Montgomery, owner of the hotel which had been the rendezvous of the main body of Mackenzie's followers, was imprisoned in Fort Henry under sentence of death.[14] Incarcerated with him were others in equally desperate circumstances. But let Montgomery tell his own story:

"We were taken from town (Toronto) to Fort Henry in the *Sir Robert Peel*, in charge of Sheriff Jarvis and a guard of negroes. Seven of us were allowed to occupy the cabin, the rest were placed on deck under guard. Several of us proposed to seize the vessel, and Anderson and myself, being chained together, were deputed to go on deck and watch the signal when we were to seize the man at the helm. We watched until in sight of the harbour, when, no signal being given, we went below, and found that the idea had been abandoned. On landing, we were immediately sent to Fort Henry, where our irons were knocked off . . . .

"We had been but a small time in the fort, when, through information given by a person kindly affected towards me, we learned that there was a possibility of our being enabled to effect our escape. This information we did not at first pay

13 Lindsey, Charles, *The Life and Times of Wm. Lyon Mackenzie* (2 vols., Toronto, 1862), Vol. II, p. 182.
14 The sentence was later commuted to transportation for life.

much attention to; but after Lord Durham had, on his arrival from Quebec, twice visited the fort, each time refusing our prayer for an interview . . . we felt that it was useless to look for mercy, and that we might at least make a venture . . . .

"We had learned that a portion of the wall in our room, although four and a half feet thick, had been completed only a short time, and the mortar was not yet dry. Behind this wall was an oak door, leading to a subterranean passage which opened into a gun room; and as the shutters which covered the port holes hung on chains, we could easily let ourselves down by means of ropes made of our sheets into the sally port of a depth of ten feet; and by the same means were enabled to get on level ground. Our sole implements of labour consisted of a piece of iron ten inches in length, and a disk nail. Having obtained half a cord of wood, we piled it up in the middle of the floor, as if for the purpose of airing our bedclothes, but in reality to hide the stone and mortar which we took from the hole. The jailer, mistrusting, caused the wood all to be pulled down; but finding nothing he allowed us to rearrange it . . . We, at length, went boldly to work; the unusual noise at first attracted the attention of the sentry, who came up to the window where I was reading the Bible, and asked the cause of it. I answered by pointing to two men, who, apparently for their amusement, but in reality to deaden the strokes on the wall, were, with shovel and tongs, beating the stove with all their might, and eliciting thereby roars of laughter from their companions; while I earnestly requested them to stop such trifling, and think of their apparently serious position . . . We commenced on Tuesday and it was Sunday ere we had made a hole sufficiently large enough to enable us to go through. As the keeper had been married the Thursday before, we begged him to take his wife to church, and allow us to refrain from our usual airing. This he was very glad to do. We then requested fourteen or fifteen pounds of biscuit, as we did not like the meat, and they kept better than bread; he sent four and a half pounds, all they had at the canteen. We had hung up our blankets, by permission of the keeper, to keep out the mosquitoes, and were thus enabled to complete our preparations without interruption.

"When the guard beat the evening tattoo and descended from the ramparts, we commenced our escape. We reached the sally port in safety; but here I had the misfortune to fall into the pit and break my leg. One of my companions descended and took my hand, and we were pulled up by the rest . . . . It was a fearful night of storm and lightning, but we decided to take down towards the river, and when daylight came to take to the woods. We had resolved to divide into parties for greater safety. We therefore divided our biscuits equally among fourteen men, Brophy, Morden, Chase and myself

Montgomery's Escape—The "Passage'

Montgomery's Escape—The "Gun Room"

decided to make for Cape Vincent, agreeing to meet the others at Watertown, should we not be retaken.

"We traveled (sic) a considerable distance on Monday, and in the evening tried to get a boat. My leg having become greatly inflamed, and as I found it impossible to proceed, it was decided that we should rest in the woods and try, by application of cold water, to reduce the inflammation. This was done; we remained for some time; at length, having got a boat, I was helped down to it, and about midnight we started in the direction of Kingston, and then crossed to Long Island, in order to escape a government vessel sent in search of us.

"We landed on Long Island, and pulled our boat up into the woods, but finding ourselves near people known to be unfriendly, we decided to cross the island and ascertain our chances of escape from the other side. We were obliged to carry our boat; which was very difficult to do with my broken leg, but I carried paddles and other articles. With great pain, and in a state of exhaustion, we at length succeeded in launching the boat and proceeded to what we felt sure was the mainland. On arriving here we knelt down and thanked God for our safety, and earnestly prayed for that of our companions.

"We soon found, however, that we were again on an island. Re-entering our boat almost famished, our slender provisions, two biscuits a day since leaving the fort, exhausted, we started for Vincent, but were obliged to put ashore, being unable to manage the boat. We pulled her up

and went to a house near the shore, and there learned that we were on American ground . . . Great sympathy and attention were shown us. A public dinner, largely attended, was given in our honour. On our arrival at Watertown, we were met by Anderson and his party, and at length all joined us, save Watson and Parker, who were retaken and put in heavy irons."[15]

Eventually, in 1843, Montgomery received a pardon from the Queen and returned to Toronto, where he erected a new tavern on Yonge Street with compensation received, ironically enough, under the terms of the Rebellion Losses Act. Surviving to the patriarchal age of ninety-six, his was the satisfaction of having fulfilled this boastful challenge hurled in the teeth of those who had sentenced him to death, "You think you can send me to the gallows, but I tell you that when you are all frizzling with the Devil, I shall be keeping Tavern on Yonge Street".

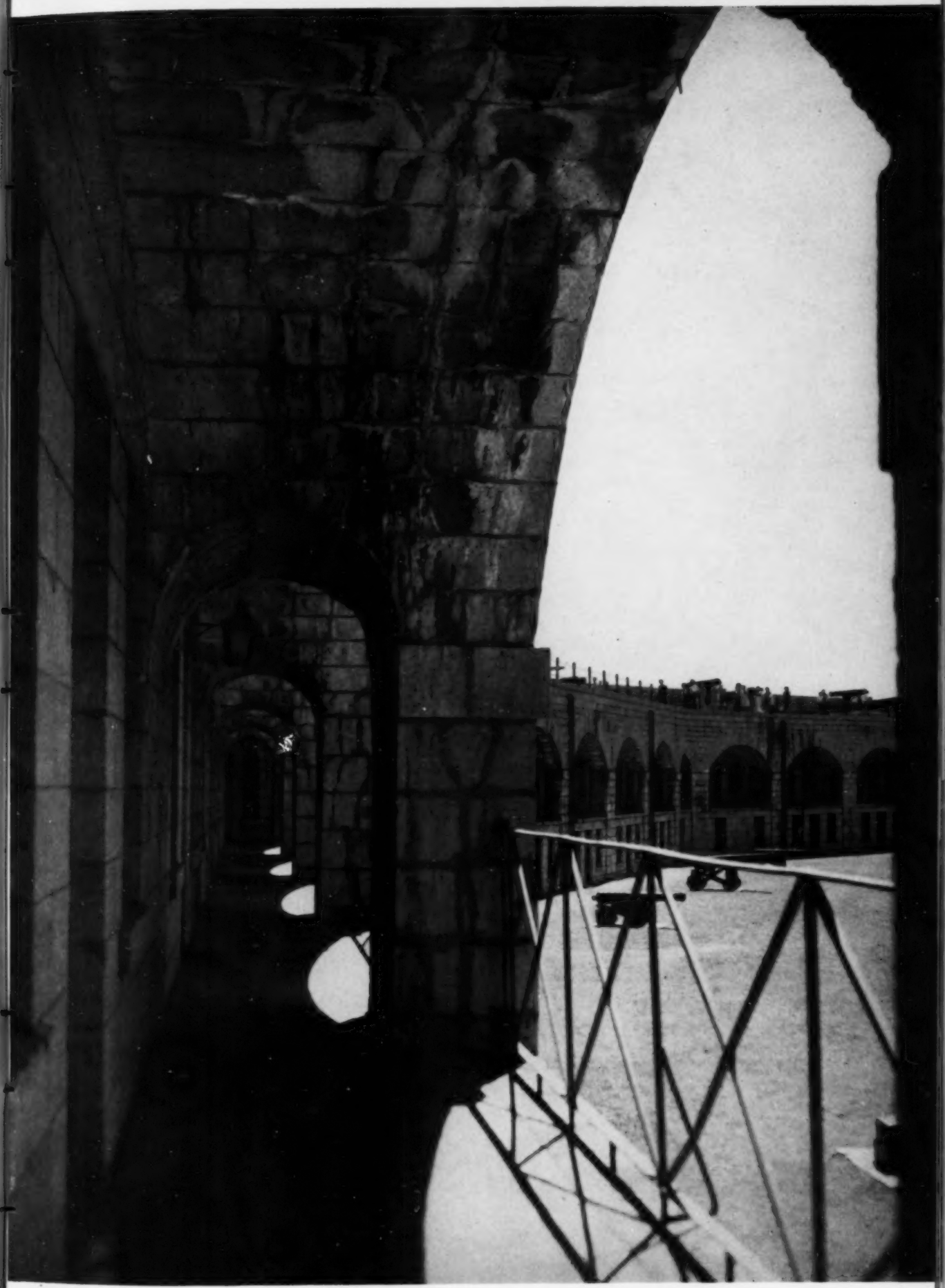
In the guard house of Fort Henry, during November of that same eventful year, 1838, was confined the misguided Von Schultz who, with about one hundred and sixty adventurers crossed the St. Lawrence near Prescott, and after four days' fighting was captured by Col. Dundas and a force from Kingston. The leader of this futile invasion was a young Polish gentleman of noble birth, liberal education and the highest aims, who had been deluded by Mackenzie's adherents into believing he was invading Canada in the cause of freedom. At his trial by court-martial, he was defended by a rising young Kingston lawyer, John A. Macdonald, destined to become the first Prime Minister of a greater Canada. The case was a desperate one, considering the nature of the crime, the character of the court, and the state of public opinion, and it was inevitable that, in spite of a brilliant defence, Von Schultz should be condemned to death. Macdonald made strenuous efforts to have the degrading sentence of hanging altered to a soldier's execution before a firing squad, but succeeded only in having it carried out on a special scaffold erected at Fort Henry, instead of on the common gallows in Kingston. Von Schultz met his death on December 8, 1838 and was buried in the Roman Catholic cemetery of the town. A most significant insight into the character of this unfortunate man is that he bequeathed £400 to the dependents of the British soldiers who had lost their lives opposing his invasion.

Fort Henry was a centre of military life for almost eight decades. Imperial troops were stationed there from 1813 to 1870, and native Canadian troops more or less regularly from 1870 to 1890. The old walls could tell of gay dances in the officers' quarters, and of white muslin gowns fluttering on tennis courts set up in the parade ground. They might also tell of sadder days when victims of Kingston's small-pox epidemic of 1908 were quarantined in the fort's casemates, or of German prisoners interned there during two World Wars.

The gradual improvement of relations with the United States, combined with military developments of the late nineteenth century, slowly decreased and finally nullified the importance of Kingston's defences. At the time of the Northwest Rebellion in 1885, Fort Henry was considered to be of little value and was soon afterwards abandoned as obsolete, the garrison being removed to quarters in Kingston. As the fort grew old and fell into decay, local legends enshrouded it. The plans of the Royal Engineers responsible for its design naturally had not been made public and in so technical a matter the speculations of amateurs, unsupported by documentary evidence, are poor substitutes for facts. Some have said that Fort Henry was built the wrong way around, the plans having been confused with those for a fort at Kingston, Jamaica; others, that the engineer responsible for the mistake was on that account cashiered out of the army, after his return to England — or again, that he committed suicide on his way there. Col. Wright, promoted as a result of his good work in Canada, would certainly have smiled at such conjectures.

15 Lindsey, op. cit., Vol. II, Appendix H.

Right:—Along the Upper Casemates, Old Fort Henry



Furthermore, the butcher of Watson Kirkconnell's tale tells us that:

"The oldest legend of the place
Was that a secret tunnel lay
Under the fortress' deepest base
And down the hill to Dead Man's Bay."

It was commonly believed that deep underground tunnels led from Fort Henry to the martello tower at Point Frederick, to Cathcart Redoubt on Cedar Island, and to the old military hospital which was located a considerable distance to the north-east of the fort. Official plans and reports do not indicate their existence and no one has ever found them.

As Fort Henry's past became veiled about with tradition, the elements worked their will unchecked, and by 1936 it was little more than a great mass of crumbling limestone with grass and weeds growing out of the chinks between the carefully hand-cut stones. The work of restoration was begun in the summer of that year under a joint scheme sponsored by the Ontario and Dominion Governments. Objective of all concerned was the rehabilitation of the ruined structure to its condition of one hundred years before, when it was the citadel of Upper Canada. Where necessary, the crumbling walls were taken down stone by stone and built up again just as they were when British engineers and contractors left them early in the nineteenth century. Careful research and painstaking workmanship were combined to produce results which professional historians concede to be as accurate as any similar achievement in North America.

Restored Fort Henry was officially opened to the public on August 1, 1938, the ceremony coinciding with the one hundredth anniversary of Kingston's incorporation as a municipality. Distinguished representatives of the federal and provincial cabinets, of the church and of the Canadian Army took part in the proceedings. After the fort had been formally transferred from the Department of National Defence of Canada to the Department of Highways of Ontario, the Prime Minister, the Right Honourable William Lyon Mackenzie King declared it officially open "for the use and enjoyment of the people of Canada and their visitors — an historic museum commemorating for ever the past of our country".

And so, today, Fort Henry is operated by the Ontario Highways Department as a public service. The casemates which once sheltered three hundred and fifty men now serve only to house illuminating collections of antique weapons, or to show how soldiers of another era lived and toiled. Room after room tells its story of the past. The guns have been replaced on the ramparts; living quarters in the fort have been refurnished, and utensils and mementoes of the period collected and arranged. The museum proper displays separate and specialized collections of infantry, cavalry, artillery, and naval arms and equipment. Much of the material in the Naval Museum is especially interesting, having been salvaged from the wrecks of

Montgomery's Escape—The "Pit"

Photo by George Lilley

THE
RESTORATION,
1936-38

Above:—An Interior View

Right:—The Main Ditch

1

2

3

THE RESTORED OFFICERS' QUARTERS

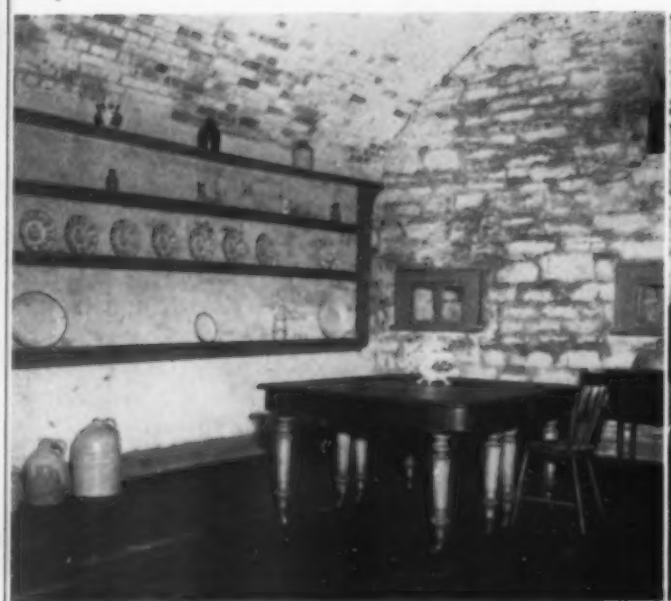
1 and 2—The Commanding Officer's Room

3—The Officers' Mess

4 and 5—The Messman's Room

Photos by George Lilley

4



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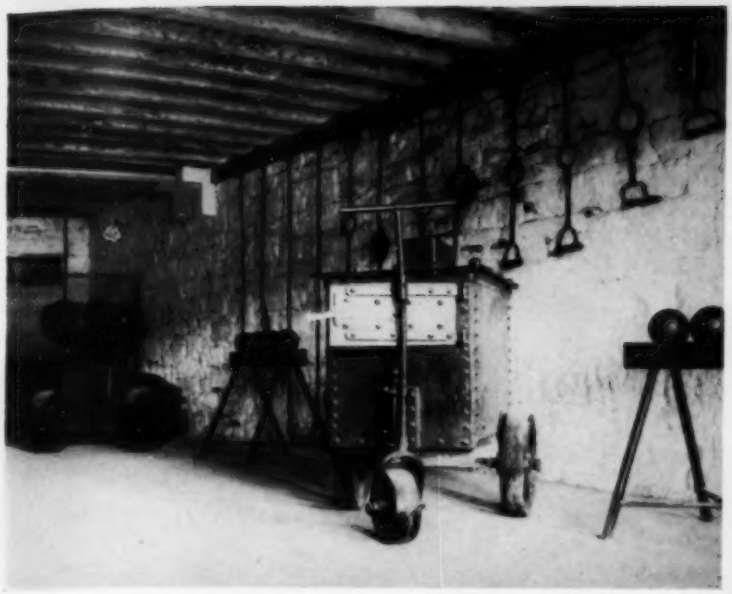


Furnace and Equipment for the Preparation of Red-Hot Shot

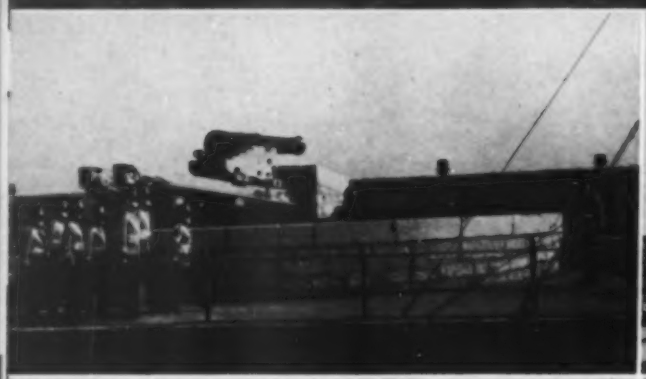
Men's Barrack Room

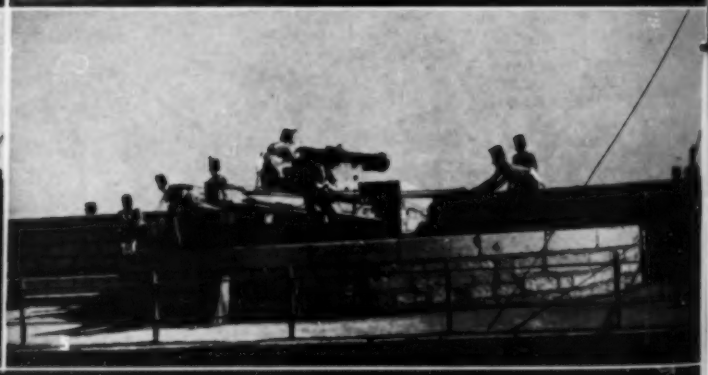
the war vessels of 1812, which lie sunk in Dead Man's and Navy Bays.

To recreate the atmosphere of the past, visitors are conducted through the fort by guides carefully trained and uniformed as Imperial troops of a century ago. Known as the "Fort Henry Guard", they are, ostensibly, a part of another age, in keeping with the limestone walls, the drawbridge and the formidable cannon. The personnel of the Guard are mostly university students, many of them being veterans of World War II. Indeed, the only anachronism in their equipment are the service ribbons of that conflict. Notable occasions are observed by the Guard with exhibitions of foot and arms drill, including the traditional *feu de joie*, and the firing of salutes with the fort's century and a half old muzzle-loading cannon, employing the drill and equipment, laid down in the text books of the period.

Since its official opening, visitors to Fort Henry have been numbered in the hundreds of thousands, and Kingston's citadel has become the most effective attraction for tourists in Eastern Ontario. Laudable as this may be, it is incidental to a higher purpose. The true significance of the Fort's

The Drawbridge Windlass





Cedar Island from the Armstrong Gun Photo by George Lilley

restoration is that it represents a practical contribution to the teaching of Canadian history and to its general appreciation. When it is possible to associate the story of some past event with the actual location where it occurred, when the story of a battle can be related upon the actual ground where it was fought, the topographical surroundings, surviving trenches, or other remains are all a stimulus to reality. It is better still, when, by crossing the antique drawbridge of a fort, the visitor finds himself, to all appearances, among the authentic surroundings of another age. The effort of imagination required to secure a sense of the past is thus within the capacity of every normal person — it is the visual teaching of history. The true value and justification of Fort Henry's restoration is that it constitutes a very real aid in transmitting to many thousands of persons, a true sense of history, which is, in reality, as much a feeling, or state of mind as it is the scientific accumulation of facts.

To Canada's American friends, always welcome guests, Kingston's past defences must remain an indirect compliment to the energy, ambition and resources of their forefathers whose ignorance of Canadian sensibilities made their ideas upon "Manifest Destiny" excusable enough. But for Canadians themselves, restored Fort Henry will long stand as a vivid reminder of those long years of tutelage when Britain, not without parental grumbling it is true, freely gave the lives and services of her sons and spent lavishly of her treasure, in order that this youthful nation might grow up unhampered and be free.

Opposite Page:—

GUN SALUTE AT OLD FORT HENRY

1—Detachment on the March

2—"Take Post at the Gun"

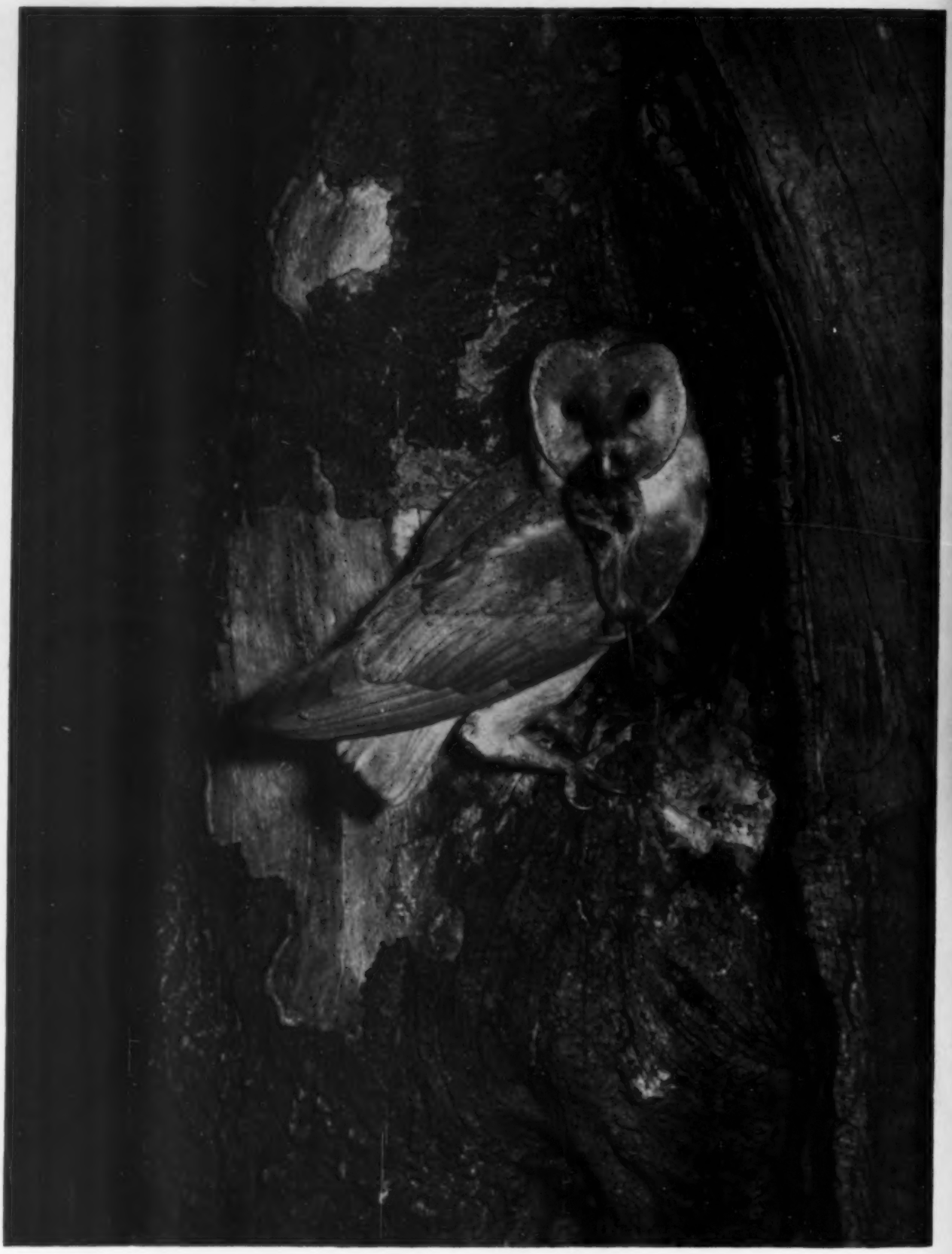
3—"Run the Gun Back"

4—"With Solid Shot Load"

5—"Traverse Right"

6—"Fire"

Photos 1 to 5 Courtesy of Color-Photo Service, Kingston
Photo 6 by George Lilley



A Barn Owl, prey in beak, at the entrance to its nest in an English beech tree. Many Barn Owls nest in old buildings, a derelict tower being used by the bird on the opposite page. This picture shows the use of the alula or thumb on the leading edge of the wing to assist steering, like a rudder.

The Barn Owl

by JOHN WARHAM

Photographs by the author

FEW BIRDS have a more widespread distribution than the Barn Owl (*Tyto alba*) for races of this species are to be found not only in Canada and the United States but throughout Europe, and in regions of North Africa, India and Australia.

It is one of the most handsome of all the owls, the typical form (*Tyto alba alba*) which is shown here, and which breeds throughout the mainland of Britain, is noteworthy for the beautiful heart-shaped disk of pure white feathers which surrounds the dark eyes. It is white on the breast—and is known as "White Owl" on this account in many parts of Britain—whilst the back and wings are clothed with golden-buff plumage. In general appearance it is benign and looks do not belie its character, for it is one of the most harmless of birds.

In Britain the Barn Owl will nest either in old and hollow timber or in derelict buildings, lofty barns, pigeon-lofts and church

A pause to transfer its prey from talons to bill.

towers. The species seems to be, in the main, non-migratory, and the same birds will occupy a site year after year, often using the nesting hole as roosting quarters by day during the winter months.

Usually about six eggs are laid, white in colour, and these are incubated in most cases from the laying of the first egg, so that the young are born with several days or even weeks between them. The owlets remain in the nest for an abnormally long period—up to eighty days has been recorded—thus in some ways they are ideal birds for study and photography at this stage of their lives. In the wild, Barn Owls often live to a good age—for birds—the oldest on record being ten years four months at the time of its death.

The hen alone incubates but the cock feeds her on the nest and when the young appear the pair carry food assiduously to the owlets. Feeding is most frequent in the dusk prior to nightfall and on good nights, when there is little wind and no rain, visits will be paid to the nest at about five minute intervals.

Flying over the hedgerows in the twilight the owl bends its head downwards to scan the grasses and undergrowth for the rodents on which it preys. When a rat, shrew, mouse or vole is seen the bird drops with talons outstretched to clasp the luckless animal in their deathly grasp. The owl then heads for home, to its nesting tree or to the church brooding above the country village, alights nearby and transfers the prey to its bill before flying up to the nest.

The Barn Owl is thus the farmer's friend since the great majority of the creatures on which it preys are detrimental to the farmer's interests. A pair of Barn Owls on the farm are a great asset in keeping the rat population down to a minimum. Unfortunately, in Britain at least, the bird is only just holding its own. The old fashioned barns with windows at the top for the owls to enter by are no longer popular, many owls die of starvation in hard weather and many more are poisoned through picking up rats that have themselves just been poisoned. As a result the Barn Owl is not really abundant in Britain even on the fringes of Sherwood Forest with its many old oaks where most of these pictures were taken.

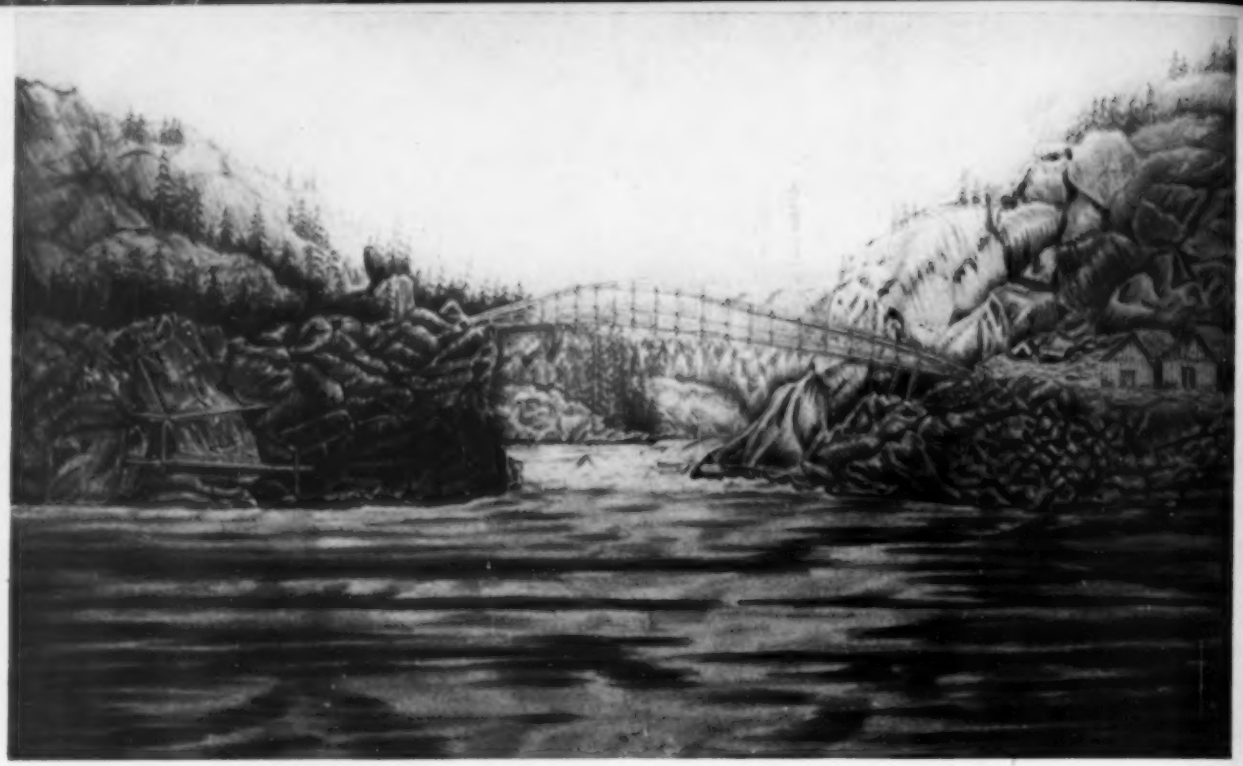
This bird has a variety of calls, but by far the most striking is an unearthly shriek which is used particularly during the winter months when the birds are pairing. It is a call that has scared many a country dweller coming home in the dark and it is not surprising that our ancestors (and many people to this day) have regarded the owl's cries as ominous.

With young in the nest the parent birds are usually fairly quiet, announcing their arrival with a kind of subdued chuckle. The owlets, on the other hand, are anything but silent, wheezing petulantly until the early hours. Their calls carry considerable distances on quiet evenings. When disturbed or alarmed the youngsters hiss vigorously, if necessary lying on their backs and lashing out with their sharp claws.

As usual with owls, the prey is swallowed whole and the fur and hard parts are cast up through the mouth as shiny cylindrical pellets which invariably are to be found inside the nest. Indeed, apart from these castings, no nest proper is made at all, but frequently the remains of the pellets are so thick—having been deposited by generations of these beneficial birds—that quite a comfortable couch is created. It is by an analysis of such pellets after breaking them up with water that our knowledge of the food habits of the species is derived.

The flexibility of the owl's wings is demonstrated in this upward flight.

Below:—The parent bird brings food for the owlets who greet it with hungry cries.



Indian Engineering

by A. F. BUCKHAM

THE Canadian Indian is well known as a hunter, woodsman, and warrior. No one has credited him with much skill in engineering construction. Yet the Indians of northwestern British Columbia made many bridges, some spanning rivers of considerable size. Some Canadians may be familiar with pictures of the Indian bridge that formerly existed at Hagweilget, near Hazelton, B.C. It seems to be considered a feat achieved but once, made possible only by the availability of telegraph wire left in the vicinity by the Western Union Telegraph Company. Indeed, Jenness, in his monograph, *The Indians of Canada*, says:

> Not only was there an absence of roads in the Dominion, but an absence of bridges also, apart from an occasional tree spanning some narrow stream. The Indians merely forded such rivers as lay in their line of march, or crossed them in hastily built rafts and canoes.

Nor does Father Morice, in a paper of over 200 pages, *Notes on the Western Dénés*, mention Indian bridge building, although the Indians he describes built at least three fairly large bridges.

In the Nass, Skeena, and Stikine basins, we have records of eleven Indian bridges and one canal. The numbers in the following list refer to map locations shown on opposite page.

No.	Location	Reported By	Seen In
1	Mouth of Beady Creek	J. S. O'Dwyer	1900
2	Mouth of Tuya River	R. Campbell	1834
3	Mouth of Tanzilla River	G. M. Dawson	1834 ?
4	On Sustut River	J. S. O'Dwyer	1899
5	Near Bear Lake	J. H. McGregor	1899
6	Skeena River, near Old Kuldo	A. L. Poudrier	1891
7	Mouth of Kuldo River	J. S. O'Dwyer	1899
8	Hagweilget, on Bulkley River	C. Horetzky	1872
9	Moricetown, on Bulkley River	N. B. Gauvreau	1891
10	Mountain stream, east side of Bulkley, 11½ miles above Moricetown	N. B. Gauvreau	1891
11	Mouth of Cranberry River	C. Horetzky	1872
12	Canal, Old Kuldo	D. Jenness	1924

At top:—(A) The early Indian bridge at Hagweilget, near Hazelton, B.C., from a sketch by R. E. Loring made in the 1890s.

This list is probably incomplete and there were doubtless other bridges of which no record was made.

None of these bridges were particularly substantial structures. The Indians who built them did not use pack horses until fairly recently, and a bridge which would carry, say, 500 pounds, was for their purposes quite adequate. Later bridges, built using telegraph wire, were much stronger. The early bridges, and those remote from such a treasure trove of wire as the Western Union cache near Hazelton, were made entirely of local materials, poles, logs, withes, and cedar-bark rope. They were very flimsy structures. The one on the Tuya looked so insecure that neither McLeod, who, in 1834, was the first white man to see it, "nor any of his eight men dared to attempt it, and from this point he and his party retraced their steps". Campbell, who for the same reason christened it "Terror Bridge", describes it thus:

> Here we came to "Terror Bridge", whence Mr. J. McLeod and exploring party turned back in 1834. . . . It was a rude, rickety structure of pine poles spliced together with withes and stretched high above a foaming torrent; the ends of the poles were loaded down with stones, to prevent the bridge from collapsing. This primitive support looked so frail and so unstable, and the rushing waters below so formidable, that it seemed well nigh impossible to cross it. It inclined to one side, which did not tend to strengthen the appearance for safety. On reaching the bridge we saw an Indian standing in front of the hut and we beckoned him to come to us. This he had apparently no intention of doing, so the two Indian lads and myself attempted the crossing which we succeeded in making; the flimsy bridge swaying and bending with our weight and threatening to precipitate us into the boiling waters beneath.

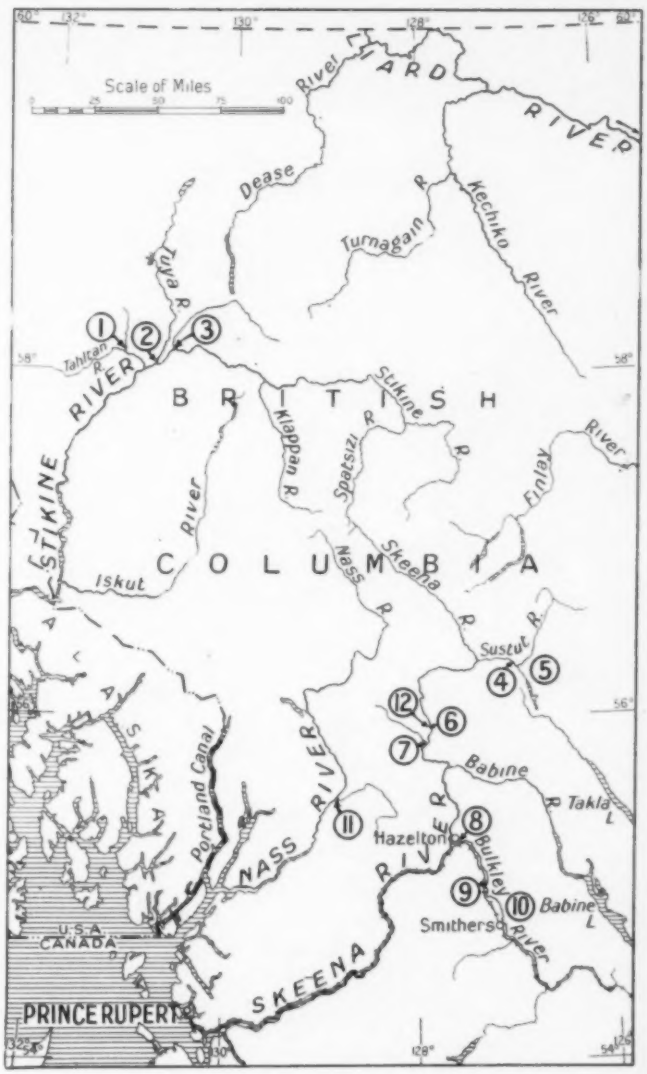
A glance at the close-up photographs of the bridge over Kuldo River (B) makes the reason for the fears of the early explorers very clear.

It is evident from Campbell's writings that these bridges were constructed on the Indians' own initiative, for at that time their only contact with white men was through another Indian tribe, living lower down on the Stikine.

Although a later bridge at Hagweilget (9) was made fairly substantial by the use of telegraph wire, an earlier bridge here was made wholly of native materials. Horetzky, who saw it in 1872 (some four years after the Western Union had abandoned their stores of wire nearby), noted:

> About three miles from Hazelton, and three hundred feet down in the rocky bed of the Wotsonqua [Bulkley], there is a large Indian ranche, or village, of some twenty houses, called the "Achwylget". Immediately in front of it the Indians have thrown a suspension bridge across the rocky chasm, through which the waters of the Wotsonqua rush with impetuous haste towards the Skeena. Here the scenery is wild, and sufficiently picturesque to please the most ardent lover of nature. The bridge is built entirely of wood, fastened together with withes and branches; its height above the roaring waters beneath is fifty feet, and it sways about under the weight of a man, to try even the nerves of a Blondin.

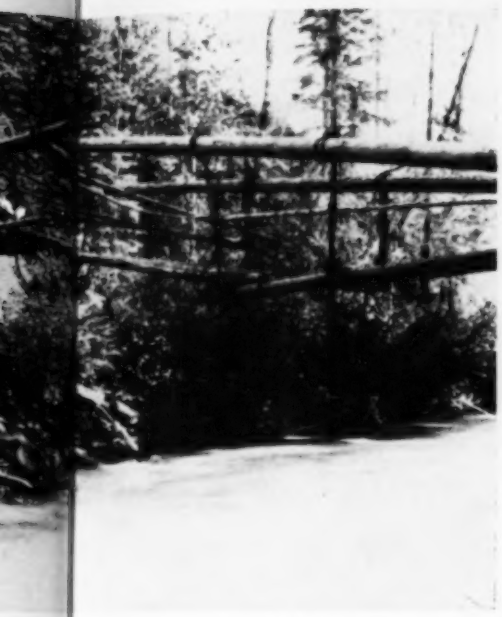
A sketch of this early bridge was made by R. E. Loring (A), for many years Indian agent at Hazelton. Comparison with a photograph



Locations of the Indian bridges and canal. The numbers correspond to those in the table.

(B) Indian bridge over the Kuldo River, on Teleg
picture note gangway closing the gap betwe
shows north abutment and floo Cedar

Below:—(C) The bridge over the Sustut River, thirteen miles above its confluence with the Skeena River (No. 4 on map).



River, on Telegraph Trail (No. 7 on map). In centre the gap between projecting poles. Picture on right d floor. Cedar-bark rope is used for lashing.

of it, in L. J. Burpee's *The Search for the Western Sea*, shows the sketch to be accurate. Photographs of the later bridge show that the two were erected in practically the same place. The span of both was between 150 and 170 feet.

The Indians showed excellent judgment in selecting sites for their bridges. They were such as to give the shortest possible span consistent with accessibility at either end. Although this often meant that the bridge was above, sometimes high above, dangerous rapids, such hazards were no deterrent to the constructors.

The method of building the bridges depended chiefly on the ground contours at the site. (The descriptions that follow will be better understood by reference to the photographs of the Sustut (C) and Kuldo (B) River bridges.) Commonly logs or poles were projected over the stream, resting on a fulcrum at the water's edge. The fulcrum might be a log lying on the ground, a long pole standing vertically under each projecting log, or a crossbar resting on two log columns. The part of the log projecting on the stream side of the fulcrum was longer than the shore end which was held down by piling on it logs and boulders. Some of the projecting logs were slanted higher than others to make the side rails. The lower ones made the walkway. The higher and lower logs were lashed together with cedar-bark rope, strengthening the whole structure. The ends of logs from opposite sides of the stream

(D) The bridge at Moricetown, across the Bulkle River (No. 9 on map). Note the approach to arch construction on the near side.

(E) The bridge across the Suskwa River, near its junction with the Bulkley, built by J. S. O'Dwyer and his survey party in 1899, using Indian methods.

(E) O'Dwyer's Suskwa River bridge had an over-all length of 177 feet, with a clear span of 67 feet. The current in the Suskwa flows at 10 miles per hour.

were sometimes also lashed together. If the projecting logs did not quite span the stream, the gap between was bridged with a gangway of shorter logs.

The foregoing application of the cantilever principle was used in all the bridges of which a record was secured. These bridges are commonly called "Indian suspension bridges" but in none except the later Hagweilget bridge was the suspension principle employed at all and even there cantilevers and trusses were the main support of the bridge. Doubtless the choice of principle was guided by the extreme difficulty of making long, strong ropes with the materials at hand.

The Indians could have utilized the arch principle but do not seem to have realized its potentialities. The ends of two pairs of poles from opposite sides of a stream could easily have been bound together to form two arches, and a walkway attached between. This would have made a strong bridge. One

side of the bridge at Moricetown was such an arch (D) but this was apparently accidental, as the other side was not arched.

One of the greatest advantages of the cantilever bridge described is that it can be readily constructed without tools other than axe and knife, and does not require the use of block-and-tackle, or construction scaffolding to emplace its members. In 1899 J. S. O'Dwyer, engineer in charge of a Canadian Department of Railways and Canals survey party, found the bridge over the Suskwa near its junction with the Bulkley washed away. Using Indian methods, he and his men built a bridge 177 feet long, with a clear span of 67 feet, in just two and a half days (E). This was crossed successfully by 100 horses and mules.

A light impermanent style of construction was sometimes used by the Indians over the narrower streams. A bridge like that over Beady Creek (F) cannot have taken more than half a day to build.

The later bridge at Hagweilget (G) differs from all the others in two ways. First, it was probably an imitation of bridges built by white men, and second, telegraph wire formed an essential part of its construction. The photograph taken from below (H) shows that it was a combination of cantilever beams supported by struts plus a king-post truss at either end, and a queen-post truss in the centre. The whole was further strengthened by wires from either end of the bridge passing over towers on the abutments then dropping down to take some of the stress at the centre of the bridge. The skilful applications of truss work suggest that the Indian builders had spent considerable time examining structures built by white men. This bridge had an over-all length of between 150 and 170 feet, with a clear span of about 90 feet. One photograph shows it carrying a man and a loaded pack horse, which together cannot have weighed many hundredweight less than a ton.

An old canard commonly told about this bridge is that, on its completion, the builders tested it by assembling a group of the fattest squaws in the village and sending them across. When they had crossed safely, the bridge is said to have been approved for public use.

Like social organization and other folkways, constructional methods were common to all Indians in the region and not confined to a single tribe. The eleven bridges were built by Tsimsyans, Carriers and Tahltans. In all this country the upper parts of the rivers are unnavigable. They are also large and swift enough to prevent fording at most places. Often they are constricted in canyons, sometimes so narrow that one feels one could

(F) A light, hastily constructed Indian bridge made from saplings at Beady Creek (No. 1 on map).

(G) The later Indian suspension bridge at Hagweilget (No. 8 on map). The truss work is similar to that used by white men. When this photograph was taken the upper horizontal strut of the centre truss was missing. Geological Survey photograph

almost jump across them. Until fairly recently the Indians travelled on foot accompanied by pack dogs and so could cross on light structures. Such a combination of conditions was very favourable to the initiation and development of bridge building skill amongst the Indians. On the other hand, Marius Barbeau learnt from L. J. Burpee that the Chuckchees of Siberia built similar bridges. It may be that the skill was brought over by migrants from Asia.

The fish traps and wharf-like scaffoldings constructed for the convenience of fishermen by many West Coast tribes showed no mean engineering abilities. Another evidence of such abilities has been recorded by Jenness (1930). He stated that in the village of Old Kuldo there was a canal about a quarter of a mile long, perhaps the only canal ever dug by Canadian Indians on their own initiative, which diverted the water of False Creek 300 yards out of its course to bring it nearer the Indians' doors.

ACKNOWLEDGEMENTS

With the exception of three, the photographs in this article were taken by J. S. O'Dwyer in 1899 and are published by permission of Mr. J. C. Lessard, Deputy Minister of Transport. The writer is indebted to Marius Barbeau, and Douglas Leechman of the National Museum of Canada, and to B. A. Latour of the Geological Survey, for assistance in the preparation of this article.

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5. McGregor, J. H., *Omenica Field Notes*, B.C. Mining Record, vol. 6, no. 1, Oct. 1899, pp. 18-24.
   Shows photograph of "An Indian Bridge near Bear Lake", p. 22.

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   Notes Indian bridge over Skeena River, a short distance below Old Kuldo, p. 362.

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   Notes Indian bridge over Alawkish (now Kuldo River), p. 162.

8. Horetzky, Charles, *Canada on the Pacific*, Dawson Bros., Montreal, 1874.
   Describes Indian bridge at Hagweilget, pp. 103-4.

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   Early Indian bridge at Hagweilget shown on plate facing p. 19. This was included in the 1907 edition.

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9. Morice, A. G., *Exploration de la Rivière Bulkley*, Bull. Soc. Neuchâteloise de Géographie, Tome XXI, 1911-12, pp. 101-126.
   Notes Indian bridge at Moricetown, p. 104.

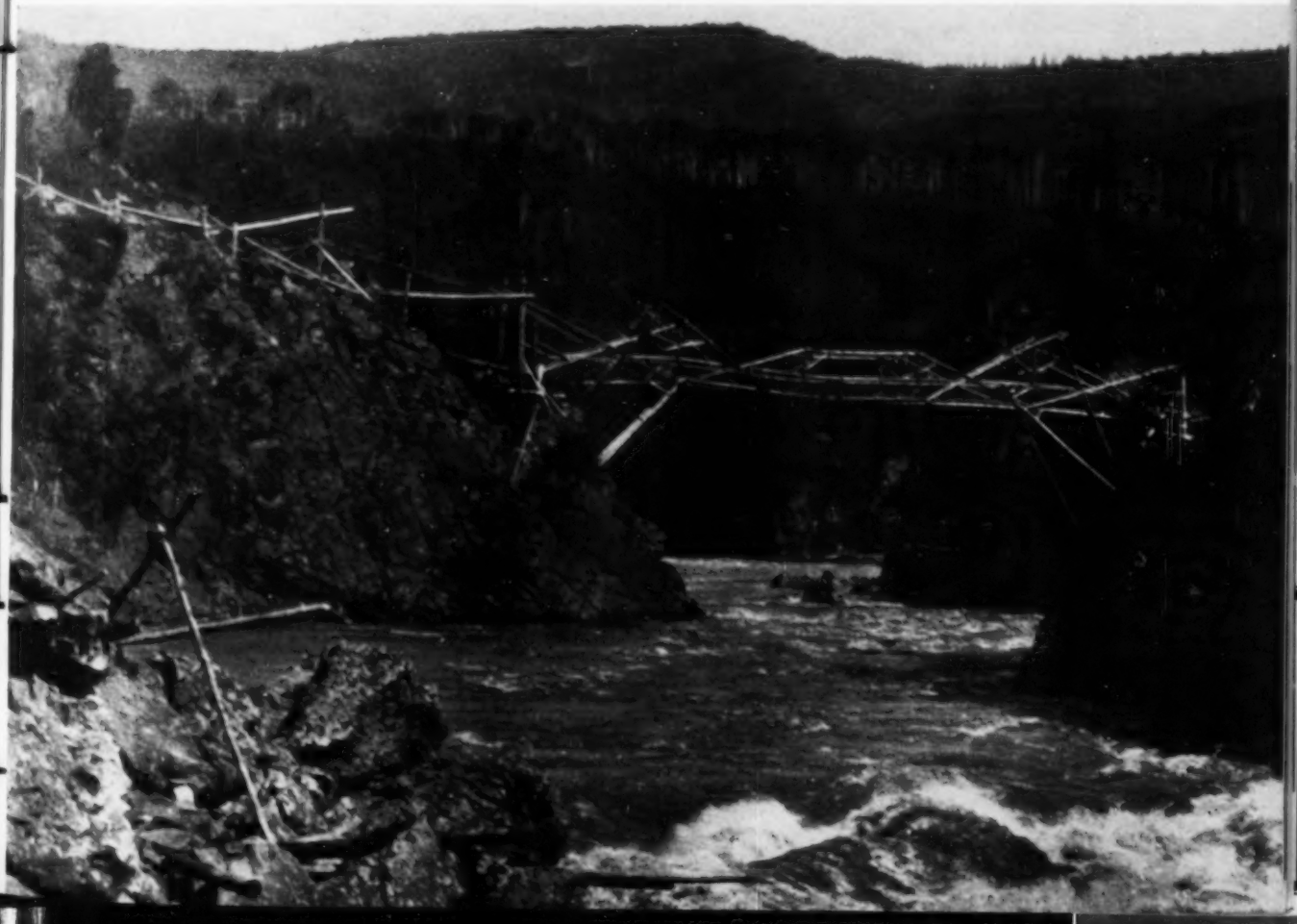
10. Gauvreau, N. B. (1891), *Op. cit.*
    Notes Indian bridge over a mountain stream, on trail on east side of Bulkley 11½ miles above Moricetown (either Reiseter or Driftwood Creeks, probably former), p. 372.

11. Horetzky, Charles (1874), *Op. cit.*
    Notes Indian bridge on the "Chean-howan" (Cranberry), just above its junction with the Nass, pp. 126-7.

11. Poudrier, A. L. (1891), *Op. cit.*
    Notes "old Indian bridge" two miles above junction of Cranberry with Nass, p. 369.

12. Jenness, Diamond, *The Yukon Telegraph Line*, Can. Geog. Journal, vol. 1, 1930, pp. 695-705.
    Notes Indian canal at Old Kuldo, p. 705.

(H) Another view, taken from below, of the later Hagweilget bridge. Geological Survey photograph



White Water

by S. C. ELLS

IT IS PROBABLE that from the time small river craft were first used, men have run rapids. Owing chiefly to incompetence, many attempts to do so have involved loss of life.

In Canada forty years ago, the term 'canoeman' implied ability to handle large and small canoes in white water. Today such is not the case.

There are two general types of rapids, namely, those in which water is relatively deep and those in which water is relatively shallow. Of necessity, paddles are used in navigating the former; in navigating the latter, iron shod or fire hardened poles, commonly ten to twelve feet in length, may be used. At times, as an alternative, a pole at the bow and a paddle at the stern may be found suitable. Incidentally the use of poles has the advantage that even in fast water, the speed of a canoe can be greatly checked or the canoe's progress stopped entirely. As a safeguard against loss by breakage or other cause, experienced crewmen usually have spare poles and paddles within immediate reach.

To run really difficult rapids successfully implies ability to 'read' water accurately, to reach decisions instantly and to follow such decisions without hesitation—for a ten-mile current runs at a speed of almost fifteen feet per second.

Selection of the channel to be followed is the responsibility of the bowman. In order to read the water well ahead, and whether using pole or paddle, he usually braces himself in a standing or crouching position. The sole duty of the man at the stern is to ensure that so far as may be possible the centre line of the canoe does not deviate from the direction of the current. As a rule the noise of rough water definitely prohibits vocal communication between crewmen; consequently decisions reached by the bowman must be indicated merely by a motion of the hand or a nod of the head.

'Follow the water' is an old adage of river-men and, as a rule, the main body of water sets toward the concave bends of the stream. However, in many shallow rapids strewn with reefs and boulders, the main body of water frequently has no definite trend.

Countless rapids, heavy and light, interrupt the courses of the many, many streams which wind across the Canadian northland. Over a rather long period of years, the writer has handled canoes through scores of such rapids. Only those who have run really difficult—and dangerous—rapids, can know the thrilling exaltation that such an experience may bring.

* * *

The bowman and the helmsman stand like swordsmen brought to bay,
Bow and stern the stout poles flicker 'midst the spume of flying spray,
And they 'read' the twisting channel in each eddy, pitch and swirl,
And they skirt the broken water where the crested combers curl;
And the humdrum world's forgotten! how the purple pages turn
In the flashing surging waters where the treacherous 'kettles' churn,
For men stake their strength and courage—and they'd stake their very souls—
When they write the Northland's sagas, when their pens are firecharred poles!

Opposite:—Running one of the many difficult rapids on upper Clearwater River, Saskatchewan.

'Oman, Including the Trucial Coast

by RONALD A. CODRAI

All photographs by the author

A bedouin of the interior on a rare visit to Arabia's east coast. Most of these nomads remain in their tribal areas and many have seen neither gulf nor sea.

ISOLATED FROM THE REST of Arabia by that great sand-sea, the Empty Quarter, 'Oman has had little contact with the outside world, and today its spirit of rule is comparable with that of mediaeval Europe. Although it was nominally subject at various periods to Portuguese and Persian rule, these conquerors were content to hold the small towns and villages along the coast, and 'Oman has had the modern privilege of being left to follow her own customs and way of life.

Geographically 'Oman includes the Trucial Coast and Biraimi oasis to the northwest and Dhufar to the southwest. Politically, however, 'Oman is far removed from being an entity, for the Trucial Coast is an independent Sheikhdom, 'Oman proper is an independent Sultanate, and Biraimi is a small neutral zone. Dhufar is an isolated part of the Sultanate which is little more than a summer resort for the Sultan.

The 'Omani tribesman is a man of warlike spirit whose loyalty is to his tribe and not to the state. Since 1913 the tribes of the interior have been in a state of open rebellion, and have appointed their own Imam, or religious leader; thus the Sultan is left with effective control over only Muscat and the adjoining coastal region. His writ is practically useless outside this area and, for this reason, travelling in 'Oman is extraordinarily difficult.

Muscat and Matrah

Lying at the foot of dark, bleak, volcanic hills at the extremity of a cove, Muscat is a small, unimportant town that suffers from one of the worst climates in the world. Its natural harbour is formed by an island of rock that is only separated from the mainland by a small channel. On the face of this rock are painted the names of Royal Naval vessels that have visited Muscat — a large though fading collection of which the Sultan is proud. On a crag, above the painted wings and number of an R.A.F. flying-boat, are two or three clay water-jars used by the Sultan for rifle practice from the balcony of his palace along the narrow waterfront.

Built high up into the cliffs are two impressive Portuguese fortresses, one on either side of the cove. Flying the red flag of the Sultan, Jalali Fort, on the east side, is the forbidding-looking state prison where, even today, all detainees are shackled. Every morning and evening five or six of the prisoners can be seen descending the long, straight stone staircase from the fort and being taken under escort to fetch water from

Left:—Jalali Fort, the massive state prison at Muscat on the Gulf of 'Oman; all unfortunate detainees here are kept permanently shackled.

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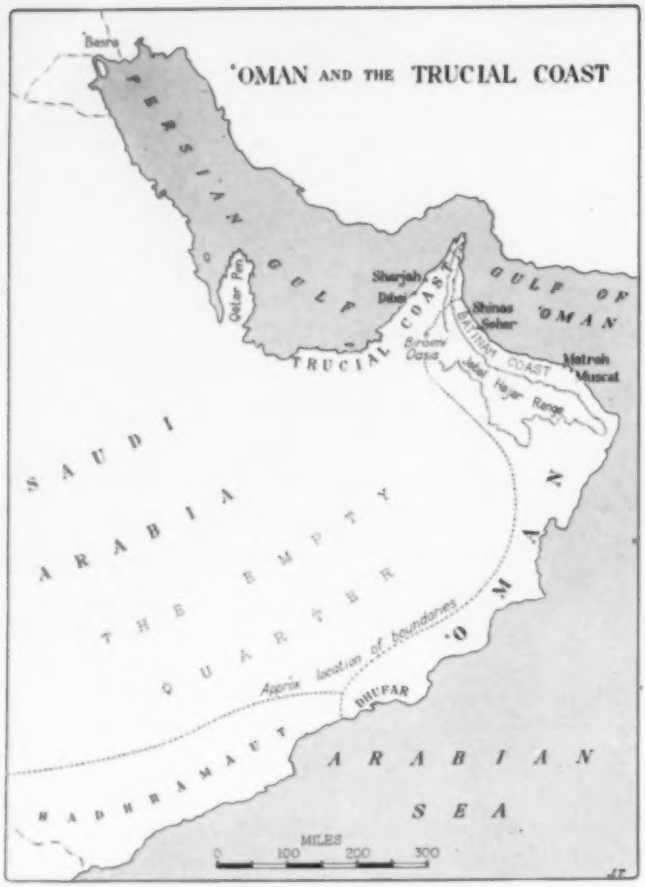


Canadian Geographical Journal map

the wells. Any discomfort they may feel from their shackles when hobbling along is probably slight in comparison with that suffered on this stairway. Among those who have been imprisoned, and probably forgotten, are relatives of the Sultan, who at some time in the past were believed to have intrigued against him, whilst the majority are, no doubt, petty thieves who also linger pending remembrance.

The other fort, opposite, is used by the Muscat Levies, a force composed almost entirely of Baluchis. Following the beating of a drum two hours after sunset, a cannon is fired from its battlements to signify the beginning of the nightly curfew. During this curfew any person apprehended out of doors within the walls of the town who is not carrying a lantern is assumed to be up to no good, and is kept in custody. As I followed a swinging lantern carried by a servant through the narrow winding streets of the town, I felt as though I had stepped back through history to the Middle Ages, when only vagabonds and fools were abroad at night. It was difficult to realize that this was a country where men were always armed against assailants, and that in their minds they still accepted and feared slavery.

There are no roads leading from Muscat to the interior, only footpaths suitable for pedestrians; thus it is that nearby Matrah is the terminus for all caravans from elsewhere in 'Oman. These two towns are connected by an uneven road that winds around the hills, but this is only used by a taxi-service of very old cars, mostly "model-T" Fords, and goods are sent to Muscat by sea. As I walked the three miles of this road I passed an almost continuous stream of men infected with syphilitic blindness being led by other pedestrians.

The monsoon does not touch 'Oman, but its progress is seen by the passing of hundreds of dhows from India and Africa, racing up the Persian Gulf before it. Many of these boats, with their large sails and galleon-like sterns, crowd into Matrah harbour and give a false impression of prosperity to this quiet little town.

A sheikh of one of the Batinah Coast towns thoughtfully surveys his domain.

The shade of palm trees provides welcome relief to desert travellers — including goats being driven to a nearby well for watering.

The Batinah Coast

The only exit from Matrah is an unmade road that runs inland through Bait al Falaj, the headquarters of the Levies, before entering a wadi that leads to the coast. At this point, a few miles to the northwest of the town, the hills recede from the shore leaving a flat, sandy plain. The Batinah Coast, as it is called, is dotted with small fishing villages of huts made from palm-fibre, and behind them, on the sandy foreshore, date-palm groves stretch for over a hundred miles and are said to be among the most extensive in the world. The dates, besides providing a staple food for the inhabitants, are exported, as they ripen before those of Basra.

Along this coast, which was visited by Palgrave before he was shipwrecked off Muscat, there are several little towns, including Sohar, next port of importance after Matrah and the ancient capital of 'Oman. The largest building in each of these towns is an old Portuguese fort, which is usually occupied by the Sheikh or a representative of the Sultan. They are connected by a motor track (little more than tire marks in the sand) which runs along the coast to a point north of Shinas, for the most part on the shore itself, turning inland into the palm groves occasionally to skirt an inlet or some other obstruction. The irrigated gardens that join the groves are a refreshing sight for travellers from the sandy wastes, which form the greater part of 'Oman, and for a time they are intoxicated with the fragrance of the fruits and flowers. The whole air is filled with

Batinah Coast date-palm groves, among the most extensive in the world, are surrounded by small irrigation channels. These are filled from skins of water hauled up by man or beast from local wells, one of which is seen here. Such areas are a luxury to the wayfarer; as he pauses to enjoy the groves' fragrance the air is filled with the musical creaking of wooden rollers at the well-heads.

The ex-R.A.F. truck on which the author travelled to the Trucial Coast; his seat is in the left foreground, over the spare wheel and under the indispensable coffee-pot.

the weird musical creakings that come from the wooden rollers at the well-heads, where water is raised in a skin and poured into the little channels that run around the gardens.

Here, as in other parts of the Arab World, hospitality is abounding, and even in the poorer fishing villages palm-fibre mats are dragged out for the guests to sleep on, and they are given dried fish to eat. Frugal though this may sound, it must be remembered that many of these people cannot afford the simple luxury of coffee.

Wheels on Camel Tracks

At a point north of Shinas a track, barely visible, leaves the coast and runs inland towards the Jabal Hajar Range, which separates the Batinah from the Trucial Coast. Pioneered along centuries-old camel tracks, this route could barely be called motorable according to Western standards, but the drivers of the two or three trucks that once or twice a month make the crossing from Dibai have learnt the art of desert driving, even though their knowledge of conventional vehicle handling is sadly lacking.

I made this crossing on an ex-R.A.F. three-ton truck, which was owned by one of the merchants of Dibai. The crew was composed of the driver, a coffee-maker and general assistant, his assistant, and the owner's son, who was to negotiate for a return load. The passengers were armed soldiers who were returning to their tribes, so

Camel caravans provide a more conventional means of desert transport. The sneering contempt of these beast for the 'new-fangled' vehicles invading their territory could hardly be more obvious!

that there was no need for any guards. These Arabs seemed strangely out of place riding on the truck, but their routine remained the same as if they were journeying on camels. Skins and tins of brackish water were tied around the truck, and a coffee-pot was suspended in an accessible position so that within a few seconds of stopping preparations for a brew could be well under way. Once or twice a mere changing-down of gears resulted in someone untying the pot and preparing to jump off. Rifles protruded from the truck at every conceivable angle, and each of the passengers was laden with bandoliers of ammunition; besides their rifles, they were armed with the *khanjar*, a curved knife that is the national weapon.

Leaving the coast to the east of Dibai town, the track goes inland towards the Hajar Range, and is soon winding its way through scrub and around low sand-dunes. Patches of soft sand and small wadis present difficulties; but before these are reached the track marks diverge in a number of directions, and it is up to the driver to decide which one to follow. More often than not he is wrong and an obstruction is met with, or the truck is stuck in soft sand. Arabs possess a strong disinclination for walking, even to the point of having contempt for those who walk unnecessarily, and a suggestion of mine that the best track could more easily be found on foot was met with silent disapproval, and the trial and error method was continued. When the party halted for the night it was, by preference, on high ground, and the camping-out routine, with its many little ceremonies of coffee-drinking, was the same as with a camel party. A noticeable fact regarding my fellow passengers was that although they travelled with the minimum of kit this included a comfortable amount of bedding for lying on, rolled in saddle-bags of gaily coloured carpet. They rightly regarded my own rucksack and thin sleeping bag with amusement, and when I explained that they were designed for carrying, chortled at their suggestion that I was not a donkey.

Soldier, guide and statesman — but above all a connoisseur of the art of coffee-making. Good manners require that a guest sip down three cups of the bitter, black brew.

When one is travelling from well to well a long rope is an essential article of equipment, for there is seldom any at the well-head itself. The water raised *en route* was warm and sulphurous, but in Wadi Qor, the pass through the Hajar Range, we found shallow pools of rain-water among the rocks, and although it must have been very stale it was considerably more palatable than the well-water. Wadi Qor is very rocky, and the three-tonner performed in an admirable manner, climbing rocks and moving forward at angles that must have been undreamed of by its makers. The party was alert and rather light on the trigger, for tribesmen continue to raid caravans going through this pass, and life is very cheap in 'Oman. The track improved towards the end of the wadi and opened out onto a sandy plain tinted a pale green by a sparse covering of grass and

The market-place at Dibai (a small British export area for less refined goods), where mingle both coastal and bedouin Arabs, Persians, Indians and Negroes.

sloping gently down to the sea. Gazelle were sighted, and the soldiers fired excitedly from the back of the moving truck. No hits were scored, but a friendly scuffle ensued when it was found that the person who had been firing the most had been helping himself to a companion's ammunition.

The Trucial Coast

The most typical feature of this monotonously low and sandy coast is the *khor*, or salt-water inlet. Most of these inlets are little more than ten feet deep, and boats other than those constructed by the maritime robbers of old were unable to approach with-

in two miles from their entrances. Thus it was that the pirate tribes were able to build their towns behind these natural booms, and to carry on their ruthless calling in defiance of the British and Portuguese navies — and to earn for their stronghold the much feared and romantic name, "The Pirate Coast". Trucial 'Oman, as it is called today, is ruled by six independent sheikhs, bound under old treaties with Britain to maintain a maritime truce for the prevention of piracy and slave-trading. Family feuds and inter-tribal quarrelling are as common among them as are the rusty, ancient cannon. Many of the latter are no doubt from British men-o'-war, and some are still used for ceremonial occasions, a party afterwards being despatched to retrieve the cannon-balls.

Unspoiled by time, Sharjah is one of the principal little towns, but it lacks the enchantment of Dibai, a picturesque centre a few miles along the coast to the west. A wide, shallow inlet divides Dibai and its waterfront of quaint little coffee-houses, and provides anchorage for dhows that bring transshipped goods from other continents. In the large market-place, spread on either side of the inlet and connected by a ferry-service of numerous little pole-propelled craft, the bedouin, with his henna-dyed beard and ancient rifle, can be seen fingering everything that is on show, from modern radio sets to ladies' lingerie, but he has little use for some of the strange products of the West. For the townsman, who is living in a mixed community of Arabs from many parts of the Persian Gulf, Persians and Indians, it is a different proposition, and his materialism has made Dibai a small British export area, though mostly for the less refined goods that are unable to find buyers on a more discriminating market.

The primitive bedouins who live by the foothills of the main mountain range, who owe allegiance to no one, are a constant cause of worry to the sheikhs, from whom they extract levies in return for protection; if the money is not forthcoming they raid the villages and carry off goods, camels and children. On the whole, however, the people of the coast seem to have a peaceful enough existence, making their living by, among other things, pearling, fishing and boat-building.

At several points along the coast the wells are some distance inland, and water has to be transported to the villages by camel or donkey. Though brackish and unpalatable, it is expensive; the cost of buying water is a burden on the poor, and they take only sufficient for their minimum needs. Even so, the water-pot is always at hand when a traveller passes by — a simple hospitality that is often very touching. The lot of the dogs, a wretched one at the best of times in the

Coastal trade along the Persian Gulf has for centuries been carried on by dhows — graceful vessels with one huge lateen sail and usually a second lesser one on the mizzen mast; many dhows can now boast auxiliary engines.

The inlet dividing Dibai is thronged with small craft. In the background may be seen the distinctive Persian-designed wind-towers which convey any available breezes to the living quarters below.

Arab World, is made ghastly by this local scarcity of water, and they can be seen watching, and sometimes licking, the gloss which is the only indication of a slight trickle from a hole in the side of a house. At other times they try to keep cool by lying at the edge of the sea, until their thirst proves too great, and they take their last drink.

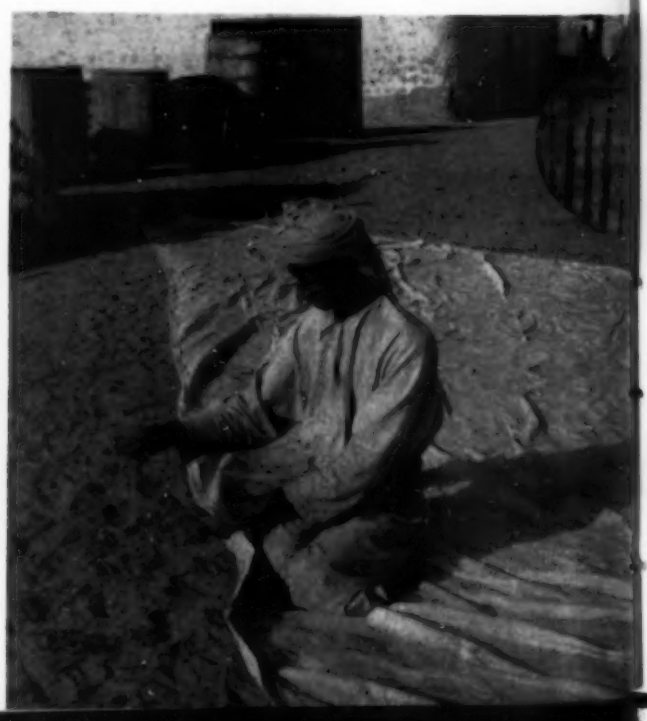
Slavery still Exists

The population is predominantly Arab, but Persians, Baluchis, Somalis and Negroes make up a considerable section of the coast-dwellers. Many of the latter are slaves, and in this polyglot society, practising polygamy and concubinage, the Arab's blood is seldom free from non-Arab strains. Although the importation of slaves from Africa and Persia is officially said to have been abolished, there is no reason to suppose that this form of trading has ceased entirely; for Britain no longer exercises her right to search vessels, and the chances of any law-breaker getting caught are very small. In addition, children are still abducted from their villages by bedouin raiders, and are sold in the market at Biraimi, the neutral region in the desert about one hundred miles to the south of Sharjah. Certificates stating that they have been born into slavery (a lucrative business for the signatories) are purchased by their owners and the unfortunate victims may then be legally transferred elsewhere in 'Oman, or even to Saudi Arabia, where they are said to fetch a higher price. Most of the slaves who *are* the children of slaves are well treated, and are faithful to their masters, so that their existence is often a better one than that of the poorer 'Omanis.

Within the next few years the search for oil is going to open-up this little-known country, and 'Westernization' will suddenly appear before its people; but, with conditions as they are, it will be some time before the way is prepared for the geologists and drillers. In the meantime, their appetites wetted by concession subsidies, the rulers of the Trucial Coast are fixing the boundaries of their lands, in order to avoid battle in the event of "liquid-gold" being found. In 'Oman proper it is more difficult, and unless the Imam and those in control of the rebel tribes can be won over, they may be expected to oppose not only the oil people but the Sultan himself.

On the coast any unveiled woman is usually either a Negress or a Baluchi. Even this little girl (fascinated by an aeroplane) would probably be veiled if an Arab. The locket around her neck contains scraps from the Koran to protect her from evil spirits.

An ancient sail-maker plies his still more ancient craft according to an unchanged design. The probabilities are that some deep-sea dhow will rely on this sail to carry its cargo of dates to Southern Arabia, East Africa or the west coast of India.



EDITOR'S NOTE-BOOK

Ronald L. Way, native of Kingston, Ontario, graduated from Queen's University with M.A. in history in 1936. Since graduation, he has been continuously in the employ of the Ontario Government. He conducted the research work for, and supervised the restoration of, a number of Ontario's historic sites, including Fort Henry, Fort George and Fort Erie. Mr. Way has been the Director of Fort Henry since its opening to the public in 1938. He is the author of numerous historical articles and of a comprehensive history of Ontario's Niagara Parks. As a hobby he operates a 260-acre dairy farm, specializing in pure-bred Holsteins.

* * *

John Warham lives in Nottinghamshire, England, and does most of his bird watching in Sherwood Forest area. The study of birds, bats and insect life is a sparetime pursuit, since Mr. Warham is a motion study investigator by profession and also edits an industrial magazine. Mr. Warham contributes articles to leading British journals dealing with natural history and allied subjects.

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A. F. Buckham was for years with the Geological Survey of Canada, with headquarters in Ottawa. In 1949 he resigned to accept an appointment in British Columbia.

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Ronald A. Codrai's home is London, England. After war service with the Pathfinder Force of Bomber Command he spent two years in political intelligence work in the Arab world, followed by a year at the Middle East Centre for Arab Studies. During this time he travelled in most of the Arab states, in 1948 going to the Trucial Coast of 'Oman, to which he returned to live in 1949.

* * *

On going to press we learn with regret of the death of Dr. J. Clarence Webster, Chairman of the Historic Sites and Monuments Board of Canada and one of the original Directors of The Canadian Geographical Society.

AMONGST THE NEW BOOKS

College Geography
Third Edition
by Earl C. Case and Daniel R. Bergsmark
(John Wiley & Sons, New York, $5.00)

Preparation of a geography text which covers the entire world, is rich enough in content to meet the needs of a college class and yet which is compact enough to fit between the covers of a not unwieldy volume is no easy task. *College Geography* by Case and Bergsmark well fulfils these conditions.

In the opening chapters the beginner is given an introduction to some geographic fundamentals such as maps, soils, climate and land forms. The treatment afforded is of necessity somewhat cursory since major attention has been given to the regional studies which follow.

As a basis for their regional work the authors have used a modification of Jones and Whittlesey's climatic classification. This breakdown of the earth into fourteen climatic regions is quite adequate and is on the whole preferable for this type of study to the more complicated classifications of Koppen and Thornthwaite. Each region is discussed first in general and then specifically with reference to its areas of occurrence throughout the world. Any inconvenience caused by the inclusion of a single crop or political unit in two or more regions is more than compensated for by the maintenance of the absolutely vital concept of regional unity. One is tempted, however, to question the allocation of space to the various regions. Over one half of the total number of pages in this section are devoted to those six regions which are at present of least value to man: the equatorial, arid (low and middle latitude), mountainous, sub-arctic and polar regions. It is true that these chapters make very interesting reading, but in a human geography surely the eight regions which contain the bulk of mankind should receive primary recognition.

Final sections covering world mineral resources, trade and transportation complete the text. While one expects any text to lay special stress on matters of greatest concern to the country in which it is to be read, the authors appear to have been a trifle over-selective, particularly in this part of the book. For example the inland waterways of the world seem to be confined to the United States. In a discussion of the Great Lakes waterways system even Canada's Welland Canal receives no textual reference.

The number of illustrations included is neither too large nor too small. A few of the photographs are, unfortunately, rather poor, but the maps and charts are quite good. Frequent comparisons of pre-war and post-war conditions have been made.

Most textbooks need to be supplemented by lectures or by additional reading material. This one is no exception. It may, however, be used to provide an excellent foundation for the introductory college course in geography.

HAROLD A. WOOD

Butterflies
by E. B. Ford

Insect Natural History
by A. D. Imms
(both Collins, Toronto, $4.50 each)

Two very attractive books in the Collins New Naturalist series which deals comprehensively with the wild life of Britain. Written by experts and copiously illustrated, with many excellent full-colour plates, the books in this series are a treasure to the reader interested in natural history. British naturalists of former times wrote many fascinating books on the native fauna and flora and it is the aim of the editors of this series to recapture something of their spirit for the edification of the present-day general reader. M.B.

* * *

The Invasion of New Zealand
by People, Plants, and Animals
by Andrew Hill Clark
(Rutgers University Press, New Brunswick, New Jersey, $6.00)

New Zealand is an excellent place in which to study the effect, on an already established flora and fauna, of the introduction of a new species of plant or animal. There most of the introductions have taken place within the last two hundred years, and the historical records, though by no means complete, are at least very much better than usual. If the scientists engaged in the study of similar transfers between the Old World and America had equally satisfactory documentation they would consider themselves fortunate indeed.

Dr. Clark has undertaken his survey in a thoroughly businesslike way. He has called all the related sciences, such as geology, physiography, and climatology, to his aid as well as the records of various government departments, such as agriculture and statistics, and he has availed himself also of the facilities of the universities and agricultural colleges.

Some introduced mammals, such as sheep and cattle, were obviously advantageous to the settlers. Others, such as rabbits and deer, have resulted in great increases in numbers, and the damage done by these animals outweighs any benefits derived from them.

The situation in the plant world is similar. Wheat and potatoes were obviously desirable introductions, but some noxious weeds have inevitably crept in, though their importance is comparatively small.

Valuable as this study is in itself, it is of even more importance because of the methods introduced by Dr. Clark, which may well serve as a plan of campaign for similar investigations elsewhere which will certainly be undertaken in the future. The abundance of maps showing the distribution of various factors is admirable; one can only regret that they were not on a larger scale. The size of the page would have permitted maps almost twice as large, and more than twice as easy to read. DOUGLAS LEECHMAN

You Must See Canada

by Cecil Carnes

(Ziff-Davis Publishing Company, New York, $2.75)

This latest travel book on Canada is an all-over sketch, in the traditional manner crossing Canada province by province from east to west. It calls itself "a new kind of travel book for Americans: informative, brief, light-hearted and concerned with present-day things". It is all of these. It even lists accommodation on the Alaska Highway. But with the recent addition of Newfoundland to the Dominion, it is automatically already out-of-date.

It is superficial, admittedly, and many a town and city will feel slighted in this "once-over lightly". Nonetheless, the author has touched on the things which will interest American readers, and has hinted at aspects which he did not have space to develop. It should be a pleasant introduction for Americans inclined to think that Canada is composed of Eskimos and Mounties, when they think of it at all. To the travelled Canadian, there is almost nothing to be learned from "a quick trip around a few of the better roads, with a dash of comment here and there to spice it up".

The author had only a few weeks for actual travel through Canada, yet he made the most of that time. He does not claim to have seen everything he describes or mentions. He leans heavily, though not obtrusively, upon tourist publications and is surprisingly free from all but minor inaccuracies. Occasionally he produces a taxi driver or waitress who talks like a professor of history.

Throughout he remains faithful to his point of view, looking at things Canadian with the eyes of the American visitor, so that his candid statement that Canada needs better roads and Canadian hostelries more bathrooms is both understandable—and accurate.

Mr. Carnes has been friendly in his interpretation of Canada, appreciating the different surface qualities which go to make up the Canadian people. Many of his observations are snap judgments, of course. He grants us a sense of humour, but finds us "not gay". There is a little bite to some of his statements, a few chastening remarks thrown in for piquancy, enough to make occasional cities twinge.

Ontario may bristle at the comment that it is still "fighting the War of 1812", and retort that the U.S.A. has fought the American Revolution for nearly two centuries. Toronto, Carnes designates as "an anthill with a purpose", and hints that its inhabitants are too impressed with the mighty dollar, and fear of neighbours' tongues; a "rockbound people" who erected a monument to the man who thought up Sunday school.

He spends exactly two paragraphs on Ottawa. Alberta is the most spectacular of the provinces, while Victoria resembles the "polite chaos of a maiden aunt living alone in an old house full of habits and heirlooms". He professes to like Saint John, New Brunswick. Montreal, he believes "one of the most delightful cities on earth" and Quebec city "the perfect tourist attraction".

The 60 photographs are taken from provincial publicity files, and those of the Canadian National Railways. Although one could wish that more of them had been given full-page, they serve their purpose adequately, that of persuading American readers that they "must see Canada". LYN HARRINGTON.

* * *

The Agrarian Revolt

in Western Canada

by Paul F. Sharp

(University of Minnesota Press, Minneapolis 14, Minn. $3.00)

To put the problem in a nutshell, which really means to over-simplify it grossly, geographical factors combined to divide Canada of the early century into an industrial East and an agricultural West, and to our mind, to quote the *Grain Growers Guide* of those years, "The conditions of affairs today in Canada and the United States drives home the striking truth that 'government for the people, of the people, by the

people' does not exist in the New World. The United States though technically a democracy, has in reality been a plutocracy. The wealthy classes in the United States have controlled legislation. In Canada . . . the same situation has existed".

In short, the West was driven to radicalism by insufficient capital to develop agricultural potentials, exorbitant interest rates, the control of farm prices by the manipulation of middle-men, and the protectionist policy of a government subservient to wealthy industrial forces.

The farmers united sectionally to promote their own interests, but they were very loath for a long time to enter politics. Their representatives were no match for the professional politicians. To make matters worse, they paid little respect to tradition and less to educating themselves for the job. They got nowhere. Yet the effort was not wasted.

The crusade for democracy came to a head after 20 years of ferment, and found expression in a new force, the Progressives, who inherited a ready-made platform embracing all the articles of western prairie democratic faith. The Progressives swept the farmers into their fold, and an envious American paper reported that "The political party led by the Hon. T. A. Crerar is the most perfectly organized political machine that exists on this continent . . ."

Yet with this success in hand, the Progressives, like every earlier farmers' party, sought to evade political responsibility. As a Progressive opposition they might have forced the Conservatives and Liberals into an uneasy alliance; instead they dallied with the idea of being a balance of power. They followed an illusion, and found disintegration . . . The party collapsed in the 1925 Federal election, yet held the balance of power in Parliament more firmly than ever. The older parties had no working majority, and the 25 returned Progressives were important. Except that they lacked party discipline. They departed from the national scene in the election of 1926.

The Prairie Revolt had ended, but it bequeathed much to the future. It seemed to die with the Progressive party, but in reality the agrarian revolt was lying dormant during a period favourable to the farmers. I well remember mourning this extinction with Frederick Phillip Grove, and marvelled at his reply, short and, ultimately, prophetic: "It isn't dead; keep your eye on Alberta. Great things will come out of the West." The depression of 1929 with its agricultural distress gave the revolt fresh life, if a new dress and new banners; the demands were the same—better marketing conditions, social control of currency and credit, and the expansion of co-operative enterprises. True, the revolt was not formally linked with labour for the first time, but the continuity of protest was there.

Progressive influence survived in the prairie governments, and though the party had lost its identity, Progressives influenced the course of political development. The revolt had released the farmers from their traditional loyalties to the old-established parties; they never returned to those loyalties, but continued to look to a third party for remedial legislation; they had become politically independent. There was no shortage of practical recognition of the political heritage from the Progressive movement, and the extent of this influence is revealed in the growth of the Social Credit Party in Alberta and the Co-operative Commonwealth Federation.

The United Farmers of Ontario, Manitoba and Alberta hurried to join the C.C.F.; it seemed to them the answer to the farmers' prayer. There was little in the C.C.F. manifesto of 1933 which we had not heard of and discussed years earlier during the agrarian revolt. The same powers were challenged, the same grievances detailed; the new feature was the alliance with labour.

The Progressive movement may be a thing of the past, but its influence lives on. In the words of T. A. Crerar who first led it, it was this revolt "that more than any other single thing left a definite and lasting impress upon the political life of the country".

Without entering into the merits or the demerits of this party or that, it seems to me that the message of the agrarian revolt to Canada is that the other fellow is not a congenital idiot simply because he does not share your views; that cuts two ways. Maybe H. W. Wood, who did such stalwart work for prairie socialism, had the right philosophy; he said it was founded, not on the gospel of Karl Marx, but on the Gospel of St. John. How sound he was will be found in the book under review; I heartily recommend it. W.H.C.

The Excavation of Ste. Marie 1
by Kenneth E. Kidd
(University of Toronto Press, Saunders, $4.75)

Probably no archaeological project in Canada has attracted as much attention as has the excavation of this ancient missionary establishment. Built by the Jesuits in 1639 as a place to which they could retire to gain a temporary reprieve from the physical and mental trials of the mission field and enjoy once more the company of people speaking their own language, it was destroyed only ten years later, burnt to the ground by the same Jesuits when they saw the little empire they had so hopefully established crumbling in ruins under the attacks of the Iroquois and decided that retreat was the only possible course open to them.

An account of the various attempts to explore and excavate the ruins would be too long to include here. Suffice it to say that investigations were carried out and maps of the site were drawn in 1852, 1855, 1876, and in 1884. Scientific excavation of the site by a competent archaeologist was not undertaken till 1941, when the Royal Ontario Museum of Archaeology in Toronto sent Kenneth Kidd, the author of the book, into the field with a group of assistants. The Jesuit Fathers, who had bought the site in 1940, helped in the work by providing accommodations for the expedition and additional assistance in the form of labour and equipment.

Though a complete stripping of the whole site could not be undertaken, enough work was done to lay bare the ground plan of the buildings and to enable one to form an accurate idea of the complex of residence, chapel, and workshops. An area of twenty thousand square feet was uncovered; over a thousand cubic yards of earth were moved; and about forty thousand specimens were collected. Of these, eight thousand were of sufficient interest to justify cataloguing them as separate entries.

The account of the excavations and the specimens collected makes it clear that we have here an excellent example of modern archaeological technique and high praise is due the author. He explains in detail the historical background, with unusual success in showing the causes which underlay the conflict between the Hurons and the Iroquois; he explains the methods used in his excavations, and discusses fully the specimens he found.

Work of this kind cannot fail to be of the highest historical importance. Light is thrown on the architecture of the period (and there are a bare half dozen sites in North America which could do so); it shows what kind of thing missionaries from France brought over with them, such as tableware, cooking utensils, carpenters' tools, tailors' sewing-kits, and even such things as bits of cloth and hooks and eyes; it aids, too, in understanding the effects of the contact of European culture of the seventeenth century with an aboriginal people still in the stone age, a problem of great significance in these days of rapid change in international boundaries.

The chief weakness lies perhaps in the maps. Surely Map 1, on page 4, could have been printed on a larger

scale making it possible to include more of the features discussed on that and on the next page. It would have been simple, and most desirable, to make Maps 3, 4, 5, 6 and 7 similar in scale and orientation. As it is, they head now north, now south, in a bewildering series of changes. However, the plates are good, and so is the bibliography and the index. It is a fine job, well done, and one that any archaeologist might well be proud of.

DOUGLAS LEECHMAN

* * *

Wildfowling in the Mississippi Flyway

edited by Eugene V. Connett

(Van Nostrand, Toronto, $16.50)

This is a handsome, profusely illustrated volume, intended primarily for hunters of waterfowl, but of much interest to wildlife scientists and conservationists also.

The greater part of the book consists of chapters, one for each province and state in the flyway, devoted to an account of the hunting of ducks and geese. Most of these chapters contain a great deal of valuable historical information and a vivid description of one or more actual hunting trips that stand out in the experience of the writer. The historical accounts, well supported by reproduction of many excellent photographs more than forty years old, give a clear idea of the unrestricted waterfowl hunting, without bag limits or precautions against waste or thought for the future, that was for a long time socially and ethically acceptable in North America. Market gunners carried on such hunting to gain their livelihood and sportsmen indulged in it for pleasure. It is easy to understand the undertone of longing for the past that is to be detected in some of these accounts, written after experience of the conservation restrictions that have become necessary in later times, as the swelling tide of human population destroyed more and more waterfowl habitat, the number of waterfowl dwindled and the number of those who sought to shoot them increased.

The "good old days", which will not return, have not been experienced by the majority of hunters of the present period, but in the pages of this volume the record of them is preserved. The Canadian provinces for which individual accounts are provided are Ontario, Manitoba and Saskatchewan. The Ontario contribution, by W. Austin Peters, is particularly commendable.

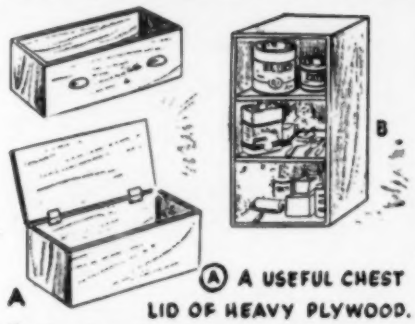
Other aspects of wildfowling in the Mississippi flyway are dealt with in five chapters. One by Frederick C. Lincoln, well-known authority on the subject of bird migration, gives a very readable description of that flyway, from the Arctic coast to the Gulf of Mexico. The next chapter, by Bertram W. Cartwright, considers the breeding grounds, the annual reproduction of wild waterfowl, and the outlook for waterfowl hunting. A chapter by Kenneth H. Smith outlines the important relation of scientific reaserch to the maintenance of the sport of wildfowling and places before the reader some of the most recent results of such research in Illinois. Finally, there are two chapters concerned with related arts and crafts, namely, duck calling and the making of hollow wood duck decoys.

It is a most praiseworthy plan thus to combine in a single volume realistic, stirring accounts of waterfowl hunting, past and present, and authoritative statements on modern waterfowl conservation concepts, research and craftsmanship. Every sportsman who hunts ducks and geese will wish to read this book and, if possible, to possess a copy of it. It makes evident the present situation of wildfowling in North America and the way in which that sport may be maintained.

HARRISON F. LEWIS

Around the Home ...

NEW USES FOR OLD DRAWERS



Ⓐ A USEFUL CHEST LID OF HEAVY PLYWOOD.
Ⓑ FITTED WITH SHELVES, HUNG ON WALL.

CHEESE BOX-VANITY SEAT

PAD TOP OF BOX. COVER TOP WITH CHINTZ. DRAPE SIDE AND TACK TO LID.

GARDENING TOOLS IN ORDER

KNICK-KNACK SHELVES

WORK WITH COPING SAW OR JIG-SAW. HEIGHT ABOUT 24". SHELVES 7" DEEP. USE SMALL FINISHING NAILS; THEN SMALL ANGLE IRON TO HOLD BACK TOGETHER

TOM GARD'S NOTE BOOK

After hitting my head with a hoe handle when stepping inside the garage door yesterday, I've put my tools in order — and here's the arrangement.

There's still plenty of usefulness left in an old bureau drawer, as the chap next door showed me. He turned one into a chest for Junior's toys; fitted another with shelves for paint cans in the basement.

An old cheese box, with the lid padded, covered with attractive chintz, draped to the floor makes a lovely vanity seat. The cheese box also serves as a catch-all for out-of-season footwear.

Nothing displays small ornaments more effectively than a wall bracket or corner shelf. Shown are two types turned out on a basement work-bench.

• • • • •

For more information on these and many other ideas — write Tom Gard, c/o MOLSON'S (Ontario) LIMITED, P.O. Box 490 Adelaide Street Station, Toronto, for the illustrated booklet "AROUND THE HOME".

ANOTHER IDEA

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